

Columbia University Bulletin

School of
Dental
and
Oral Surgery

1973-1974

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Columbia University in the City of New York

School of
Dental
and
Oral Surgery

1973-1974

The Faculty of Dental and Oral Surgery

William J. McGill, Ph.D., LL.D., L.H.D. *President of the University*
Wm. Theodore de Bary, Ph.D., L.H.D., D.Litt. *Executive Vice President for
Academic Affairs and Provost of the University*
James S. Young, Ph.D. *Deputy Vice President for Academic Affairs*
Paul A. Marks, M.D. *Vice President in Charge of Medical Affairs*
Melvin L. Moss, D.D.S., Ph.D. *Dean*
Stephen Wotman, D.D.S. *Special Assistant to the Dean*

Harold L. Applewhite, D.D.S., M.P.H. *Associate Professor of Dentistry*
Herbert D. Ayers, D.D.S. *Associate Professor of Dentistry*
Frank E. Beube, L.D.S., D.D.S. *Adjunct Professor of Dentistry*
Edward A. Cain, Jr., D.D.S. *Professor of Dentistry*
Erwin Chargaff, Ph.D. *Professor of Biochemistry*
Joseph A. Cuttita, D.D.S. *Professor of Dentistry*
Edward W. Dempsey, Ph.D. *Professor of Anatomy*
Nicholas A. Di Salvo, D.D.S., Ph.D. *Professor of Dentistry*
Robert Gottsegen, D.D.S. *Professor of Dentistry*
Brian F. Hoffman, M.D. *David Hosack Professor of Pharmacology*
Sidney L. Horowitz, D.D.S. *Professor of Dentistry*
Donald W. King, M.D. *Francis Delafield Professor of Pathology*
Austin H. Kutscher, D.D.S. *Associate Professor of Dentistry*
Joseph M. Leavitt, D.D.S. *Clinical Professor of Dentistry*
John J. Lucca, D.D.S. *Professor of Dentistry*
Patricia A. McLean, M.A. *Associate Professor of Dental Hygiene*
Irwin D. Mandel, D.D.S. *Professor of Dentistry*
Henry I. Nahoum, D.D.S. *Associate Professor of Dentistry*
Harry M. Rose, M.D. *John E. Borne Professor of Medical and Surgical Research*
Solomon N. Rosenstein, D.D.S. *Professor of Dentistry*
John V. Taggart, M.D. *Professor of Physiology*
Ennio L. Uccellani, D.D.S. *Associate Professor of Dentistry*
Edward V. Zegarelli, D.D.S., M.S. *Edwin S. Robinson Professor of Dentistry*

COMMITTEES

ADMISSIONS (UNDERGRADUATE)	Professors Cuttita (<i>chairman</i>), Boelstler, Caronia, Nahoum, and Smith; Dean Moss (<i>ex officio</i>)
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ADMISSIONS (DENTAL HYGIENE)	Professors McLean (<i>chairman</i>), Cuttita, Klyvert, and McKinney; Dean Moss (<i>ex officio</i>)
EXECUTIVE	Dean Moss (<i>chairman</i>); Professors Applewhite, Cain, Di Salvo, Gottsegen, Horowitz, Leavitt, Lucca, I. D. Mandel, McLean, Minervini, Rosenstein, Smith, and E. V. Zegarelli
INSTRUCTION	Professors Cain (<i>chairman</i>), Applewhite, Dempsey, Di Salvo, Dworkin, Gottsegen, Horowitz, Kahn, D. Kaplan, King, Leavitt, Linz, Lucca, McLean, I. D. Mandel, Minervini, Moss-Salentijn, Noback, Nocenti, Rose, Rosenstein, Smith, Stroh, and E. V. Zegarelli; Miss Goode; Dean Moss (<i>ex officio</i>)
FIRST-YEAR CLASS	Professors Smith (<i>chairman</i>), April, Dempsey, Dworkin, Feigelson, Gambino, King, Luckett, I. D. Mandel, Noback, and Nocenti; Dean Moss (<i>ex officio</i>)
SECOND-YEAR CLASS	Professors Cain (<i>chairman</i>), Applewhite, Blake, Donovan, Gottsegen, Horowitz, Kahn, I. D. Mandel, Minervini, Moreinis, Moss-Salentijn, Smith, and Ucellani; Dean Moss (<i>ex officio</i>)
THIRD-YEAR CLASS	Professors Lucca (<i>chairman</i>), Cain, Leavitt, I. D. Mandel, Minervini, Nahoum, Rosenstein, Schwartz, and E. V. Zegarelli; Dean Moss (<i>ex officio</i>)
FOURTH-YEAR CLASS	Professors E. V. Zegarelli (<i>chairman</i>), Applewhite, Cain, Di Salvo, Gottsegen, Lucca, Minervini, and Rosenstein; Dean Moss (<i>ex officio</i>)
POSTGRADUATE	Professors Naidorf (<i>chairman</i>), Cuttita, Di Salvo, Gottsegen, Leavitt, Person, Rosenstein, and E. V. Zegarelli; Dean Moss (<i>ex officio</i>)
DENTAL HYGIENE	Professors McLean (<i>chairman</i>), Applewhite, Cuttita, Di Salvo, D. Kaplan, Klyvert, McKinney, Uccellani, and E. V. Zegarelli; Dean Moss (<i>ex officio</i>)
INSTRUMENT	Professors Uccellani (<i>chairman</i>), Brzustowicz, Lucca, Nahoum, Rosenstein, and Schwartz; Mr. McGrath; Dean Moss (<i>ex officio</i>)
SCHEDULING	Professors Cain (<i>chairman</i>), Horn, and Koch; Dean Moss (<i>ex officio</i>)
CLINICAL POLICY	Professors Cain, Gottsegen, Koch, Leavitt, Lucca, and E. V. Zegarelli; Dean Moss (<i>ex officio</i>)
CONTINUING EDUCATION	Professors Gottsegen (<i>chairman</i>), Di Salvo, Horowitz, D. Kaplan, Leavitt, Lucca, I. D. Mandel, and E. V. Zegarelli; Dean Moss (<i>ex officio</i>)

DELEGATES TO THE UNIVERSITY SENATE

Edward A. Cain, Jr.

S. Abel Moreinis

ADMINISTRATIVE STAFF

Kathrine L. Baker. *Administrative Assistant*

Eileen H. Daly. *Assistant Registrar*

Ann M. Emmerich. *Assistant to the Dean*

C. Lee Jones, M.L.S. *Head, Medical Sciences Division Libraries*

Gary L. Herrmann, M.B.A. *Cost Accountant*

Michael J. McGrath. *Manager of Dental Stores*

OFFICERS EMERITI

Carl R. Oman. *Professor Emeritus of Dentistry*

Gilbert P. Smith. *Professor Emeritus of Dentistry; Dean Emeritus*

Frances A. Stoll. *Professor Emeritus of Dental Hygiene*

Objectives of the School

The School of Dental and Oral Surgery of Columbia University can trace its origins to the year 1852, when the New York State Legislature chartered the New York College of Dental Surgery. The College became part of Columbia University in 1916 when it was recognized that dentistry is an integral part of the health sciences and that dental education is a true university discipline. The program of the School was established on this basis. Many departments of the University contribute to and collaborate on the education of the dental student, thereby assuring him a broad foundation for sound professional development. As the guiding educational policy of Columbia University is a constant pursuit of excellence, the primary goal of the School of Dental and Oral Surgery is the preparation of dentists who will fulfill their obligations to the individual, to society, and to the profession. The dental education policy at Columbia has in the past provided leadership in the maturation of dentistry in the United States. Two examples of such leadership are (1) the establishment at Columbia University in 1920 of the first organization devoted exclusively to research in dentistry, and (2) Professor William J. Geis' preparation of a major critique of dental education in the United States in 1926 which resulted in the acceptance by dental schools throughout the country of the basic policies and objectives developed at Columbia.

The University, realizing the need for even greater emphasis on the prevention of dental disease, is again revising the dental curriculum. The new curriculum is designed to increase the student's appreciation of the conceptual basis of dentistry. Adequate preparation for dentistry demands an understanding of broad biological principles integrated with the continually evolving body of scientific information in clinical dentistry and basic dental research. Building on this base, the student is exposed to the full spectrum of dental problems as a directed observer, and is then introduced to those surgical and manipulative procedures and methods of diagnosis and prevention which he must learn to perform with a high degree of competence. Emphasis is on the close relationship between systemic and oral health and disease, on systemic aberrations that affect the oral structures, on diseases of the mouth which may affect other organ systems, and on dental health as an essential to total health.

Clinical training is broad in scope. It is designed to produce competence in the recognition of oral disease and disorder, to stress the essential role of prevention in the control of oral disease, to establish the concept of maintaining the oral structures in optimal health, and to develop skill in planning and execution of treatment.

It is necessary that the dental curriculum be considered only the initial framework for the student's lifetime participation in dental science and art. To this end, the curriculum must cultivate in the student those habits of independent thought and scholarship that encourage the continual evaluation of new knowl-

edge. Although learning plays a vital role in the student's life, his future development and attainment can be assured most effectively by fostering a spirit of inquiry. Accordingly, there is constant application of the scientific method, and both undergraduate and postgraduate students are encouraged to participate in research.

Because the population is rapidly increasing, knowledge of the processes of human growth and development and of prevention of disease and abnormality must be amplified. In medicine, prevention of disease has resulted in extensive reduction in infant and child mortality and in a marked increase in the life span of the individual. In dentistry, prevention of dental and oral disease and disorder must be effected in childhood to enable our youth to reach adulthood with complete, healthy dentitions and socially acceptable speech and expression. The increased life span presents many new physiological, pathological, and psychological problems which are peculiar to the aged and are open to investigation. In addition to undergraduate education, programs in graduate education and research are essential if we are to meet these challenges to dentistry. The School of Dental and Oral Surgery regards high standards in both graduate education and research as prime objectives which follow directly from its objectives in undergraduate education.

Foresight on the part of the founders of the School of Dental and Oral Surgery has provided for the education of auxiliary personnel to augment dental health services. The program of Courses for Dental Hygienists was established in the same year that the School became part of the University. A formal dental auxiliary utilization program is functioning at the School. It is designed to train auxiliary personnel and dental students in the efficient use of auxiliaries. This program also explores new opportunities for the use of auxiliary personnel in an attempt to provide additional services to meet the expanding dental health needs of a growing population.

The University has realized that to accomplish these objectives requires the selection of students with superior abilities and academic qualifications, acquisition and maintenance of an excellent staff, and constant pursuit of knowledge through an active and diversified research program. Conscious of these needs, the School selects its students with care and maintains small classes, with a favorable ratio of staff to students. This permits individual instruction and a stimulating relationship between student and instructor. The School has, through the years, had a distinguished staff which has demonstrated accomplishment in education, research, and professional leadership, and which continues in its ability to prepare students for the expanding professional responsibilities of dentistry and the prevention of dental disease.

► THE PROGRAM OF STUDY

September 1969 marked the inauguration of an exciting new curriculum at the School. All of the basic science courses are being offered to both dental and medical students in the form of a "core" program. During the first year the

dental student takes all the basic science subjects except pharmacology (second year, first trimester). Also in the first year the dental student is required to take three courses (1) *Introduction to Dentistry 100*, in which he is exposed to the nature of dentistry and its significance, the means of delivery of dental care, and the kinds of preventive and treatment services which modern dentistry provides; (2) an interdisciplinary course in human behavior which deals with the psychological aspects of patient care; and (3) a series of correlation clinics consisting of lectures and demonstrations designed to integrate medical and dental clinical subjects with the basic sciences.

Under the new curriculum, the second year is essentially a "core" dental-science year, providing the full range of courses in oral biology as well as the conceptual basis for the application of modern methods in the recognition, prevention, and treatment of dental disorders. Clinical observation, small group teaching, and frequent seminars provide the second-year student with a comprehensive view of dentistry. The new program also includes an integrated course in dentistry (recognition, prevention, concepts of therapy, instrumentation, and clinical observation) as well as a course in psychosocial aspects of dentistry.

In the new curriculum, the third year is primarily clinical, with training in all phases of dentistry. Emphasis is on correlation of the various dental disciplines with each other and with the basic sciences. Prevention and comprehensive treatment are stressed while technical laboratory procedures are limited. Third-year students function as student preceptors for second-year students and conduct or participate in seminars on clinical subjects with second- and fourth-year students and staff.

During the fourth year under the new curriculum, the opportunity to choose electives in special areas of dentistry is made available, and over the next few years an increasing number of electives are to be designed and offered. In order to increase their ability to view clinical cases in a comprehensive manner, fourth-year students spend time as student preceptors in the clinic and in seminars held in conjunction with underclassmen and the staff.

Because of the constantly expanding body of knowledge in basic and dental sciences and the need for adequate clinic time, two summer sessions are required: (1) between the second and third years; (2) between the third and fourth years.

Throughout the entire course an effort is made to interrelate the different phases of dental learning by means of "correlative" and "combined" clinics in which the various departments and divisions cooperate in the discussion and demonstration of the same and related problems and thus treat the study of dentistry as a unit rather than a series of isolated branches of learning. At the same time an attempt is made to individualize instruction and to place responsibility as far as practicable upon the student for his own training. This is accomplished by the division of classes into small sections, by conferences, and by the comprehensive case method of instruction.

The student's voluntary participation in research projects of his own choosing and in programs under the guidance of the faculty is earnestly encouraged. Members of the William Jarvie Society for Dental Research, the undergraduate research and honor society, undertake individual and team projects under the direction of members of the faculty. Lectures on the principles and practice of research are

provided for the membership. In addition, students assist in the execution of studies being pursued by faculty members. A limited number of student research fellowships are available for summer work under the direction of the staff. The scope of student research includes critical reviews of the literature, clinical studies in the techniques of the various disciplines of dentistry, and the evaluation of newer therapeutic agents and dental materials. Work in the basic sciences is encouraged.

The administrative offices and the clinical and research facilities of the School of Dental and Oral Surgery occupy three floors of the Vanderbilt Clinic wing of the Columbia-Presbyterian Medical Center, one of the great institutions of its kind in the East. In addition to research facilities in basic science departments in the College of Physicians and Surgeons, the School has research laboratories in two nearby buildings.

THE DENTAL CLINIC

The School benefits in many ways by its association with the Medical Center. One of the functions of its clinic is the dental care of patients in the Center's hospitals. Dental students are given a unique opportunity to gain experience in the diagnosis and care of those cases where a relationship exists between oral and general systemic diseases. The student also learns at first hand the problems of providing dental care for the hospitalized patient. The wards and outpatient departments of the Center give close contact and association with all branches of the health services.

THE LIBRARY

The Medical Library occupies parts of the three lower floors in the College building. It provides current literature, both books and journals, for faculty and students, and it aids in research through its own collection of current and historical works and through its unique bibliographic service.

The library contains approximately two hundred ninety-five thousand volumes of books and journals, some five thousand pamphlets, and about two thousand slides on the history of medicine. More than forty-five hundred periodicals are received regularly. A professional library staff is available to aid students, faculty, and research workers in medicine, dentistry, nursing, public health, and the hospitals of the Medical Center.

The libraries on the Morningside campus, which contain over four million books, periodicals, and documents, are open to all students. The main collection is housed in Butler Library, while special departmental collections are located in various other buildings on the campus. They include collections on biology, chemistry, psychology, sociology, and other subjects related to dentistry and supplement the special collections available in the Medical Library. Books may be borrowed for home use.

The Medical Library is open Monday through Friday, 8:30 a.m. to 11 p.m.; Saturday, 9 a.m. to 5 p.m.; and Sunday, 12 noon to 10 p.m., during the academic year. All other libraries post their hours.

► POSTGRADUATE TRAINING

The School of Dental and Oral Surgery arranges courses in the various areas of dentistry to meet the needs of practitioners. Short refresher courses are offered in various subjects. Admission requirements include graduation from an approved dental school and licensure to practice dentistry within the United States or a foreign country. There is no degree or certificate offered for these courses.

The School is also authorized to grant certificates of training in special branches of dentistry. Study for the certificate of training includes special work in the clinical and basic-science branches of dentistry approved by the Dean. At present, programs are offered to qualify graduates in dentistry who wish to prepare for specialization in endodontics, orthodontics, pedodontics, and periodontics.

For further information see the bulletin called Postgraduate Programs in Dental Specialties, which may be obtained from the Admissions Office, School of Dental and Oral Surgery.

GRADUATE COURSES IN THE BASIC SCIENCES

A limited number of fellowships are available to graduates of accredited dental schools. These fellowships offer opportunity for study in the following basic-science departments of the University: anatomy, biochemistry, microbiology, pathology, pharmacology, and physiology. For further information, address the Dean, School of Dental and Oral Surgery.

COURSES LEADING TO THE DEGREE OF DOCTOR OF PHILOSOPHY

Graduation from accredited dental schools under the present curriculum of four academic years preceded by three acceptable predental college years is considered by the Graduate School of Arts and Sciences of Columbia University to meet the general requirement for admission. There are additional admission requirements in certain departments. A student who is accepted by the Graduate School as a candidate for the degree of Doctor of Philosophy and who holds the Doctor of Dental Surgery degree from Columbia University may, with the consent of the Dean, offer the work done for the professional degree in lieu of points toward the fulfillment of the residence requirement for the degree. For further information see the bulletin of the Graduate School of Arts and Sciences, which may be obtained by writing to the Graduate School of Arts and Sciences Office of Student Affairs, 106 Low Memorial Library, Columbia University, New York, N.Y. 10027.

PUBLIC HEALTH FOR DENTISTS

A one-year course leading to a Master of Public Health degree is offered by the School of Public Health. The course is open to graduate dentists. For further information regarding course content, registration, and fees, apply to the Director, School of Public Health, 600 West 168th Street, New York, N.Y. 10032.

► COURSES FOR DENTAL HYGIENISTS

Columbia offers a bachelor's and a master's degree in dental hygiene. Candidates for the Bachelor of Science degree are admitted only in September under one of two classifications: Program A, for the student with two years of liberal arts college credit; Program B, for the student with two years of dental hygiene college credit. Candidates for the Master of Science degree are admitted in September or January. The program for the M.S. degree provides advanced education in dental hygiene administration, research, and teaching.

For further information address inquiries to the Director, Courses for Dental Hygienists, 630 West 168th Street, New York, N.Y. 10032.

Courses of Instruction

The University reserves the right to withdraw or modify the courses of instruction or to change the instructors at any time. As indicated in the Objectives and Program of Study, the curriculum is undergoing extensive revision. Announcements concerning course titles, content, and staffing of a number of new courses will be made prior to the start of the 1973–1974 academic year.

ANATOMY

Anatomy 115. Oral microscopic anatomy and embryology

Professor Moss-Salentijn and the staff. Second year.

This course is the same as *Oral Biology 200*.

Lectures, conferences, and laboratory on the detailed microscopic anatomy and development of the dental and associated orofacial structures.

Anatomy 150. Microscopic anatomy

Professor Dempsey and the staff. First year.

Lectures, conferences, and laboratory.

This course is the same as *Anatomy 101F* in the College of Physicians and Surgeons.

Anatomy 151. Gross anatomy and embryology

Professor April and the staff. First year.

Regional dissections of the complete body, augmented by lectures stressing *functional* interpretations. Lectures correlate developmental anatomy with gross anatomy.

Anatomy 153. Nervous system

Professors Carpenter and Noback, and assistants. First year.

Lectures and demonstrations on the gross anatomy, structure, and functions of the central nervous system.

Anatomy 352. Functional anatomy of the head and neck

Professor Crikelair and the staff. Third year.

A concise review of the functional interrelationships in this region and their dynamic significance. Pertinent clinical topics are analyzed from this viewpoint.

BIOCHEMISTRY

Biochemistry 150. Principles of biochemistry

The staff. First year.

A survey of the chemical constituents of the mammalian cell and their metabolic activities; energy production in the cell, and its role in the synthesis of biological macromolecules; biosynthesis of nucleic acids and proteins; regulation of nucleic acid and protein synthesis.

COMMUNITY HEALTH

Community Health 202. Preventive dentistry and community health

Professors Applewhite and Dworkin, and the staff. Second year.

Lectures, demonstrations, and field exercises in education for prevention.

Community Health 300. Social dynamics

Professor Applewhite. Third year.

Lectures and seminars on utilization of health facilities by groups, response of society and the individual to health problems, social and cultural conditions that influence disease, environment and ecology; the dynamics of community action and sociocultural barriers and motivating factors.

Community Health 301. Principles of community health

Professor Applewhite. Third year.

Survey course in theory and practice of public health with more detailed discussion of dental public health, group practice, community involvement, and dental health education resources. Opportunities are provided for field trips and observation of dental problems and dental care in community and institutional settings.

Statistics and Epidemiology 200.

Professors Chabora and Applewhite, and the staff. Second year.

Lectures, seminars, fieldwork, and laboratory sessions in basic biostatistics and dental epidemiologic methods. A joint course of the divisions of orofacial growth and development, preventive dentistry, and community health.

Systems of Dental Practice 400. Ethics, jurisprudence, and history of dentistry

Professor Applewhite and the staff. Fourth year.

Lectures as prerequisite to the proper appreciation of community dentistry. They include the broad obligations posed by socioeconomic, humanities, ethics, and jurisprudence, and consider the evolution of preventive dentistry and community health as part of the advances made in dentistry.

Systems of Dental Practice 401. Health economics

Professor Applewhite and the staff. Fourth year.

The present and projected means of government, insurance, industrial, labor, and private financing of oral health care. The advantages and disadvantages of each method of financing oral care.

DENTAL AUXILIARY UTILIZATION

Dental Auxiliary Utilization 300 and 400.

Professor Kaplan and the staff. Third and fourth years.

Lectures and demonstrations emphasizing the operation of clinical practice. Consideration of equipment space in this mode of practice. Practice management principles, the economics of dental office operation, and the training of auxiliary personnel are presented in the fourth year.

ENDODONTICS

Endodontics 232. Endodontics theory and technique

Professors Leavitt, Naidorf, and Moreinis, and the staff. Second year.

Lectures and seminars on the fundamentals of endodontics. Demonstrations and exercises in endodontic technique on extracted teeth.

Endodontics 335. Basic clinical endodontics

Professors Goodman and Cantor, and the staff. Third year.

Demonstrations and clinical experience in the practice of endodontics on selected single-rooted teeth.

Endodontics 436. Advanced clinical endodontics

Professor Leavitt and the staff. Fourth year.

Lectures and clinical experience in more advanced problems in endodontics.

INTERDISCIPLINARY CORRELATION COURSES

Correlation Clinics 100.

Professors Taggart and Herter. First year.

A series of clinics illustrating the application of basic science to the understanding of disease mechanisms.

Introduction to Dentistry 100.

Professor Halpert and the staff. First year.

Lectures, demonstrations, clinical observation, and experience designed to define the scope of dentistry early in the career of the dental student. Correlation between the preclinical and clinical disciplines is an integral part of the course content.

Introduction to Dentistry 200.

Professor Halpert and the staff. Second year.

Lectures, demonstrations, clinical observation, and experience designed to permit the second-year student to experience the newly developing curriculum as early as possible. It begins to supply the background he needs to utilize fully the modifications in emphasis and course content in his ensuing clinical training.

Dental Materials 327. Physical properties of dental materials

Professor Ayers. Third year.

Lectures and demonstrations relating the properties and functions of the restorative and accessory dental materials with the oral tissues. This is supplemented by correlated instruction in the various clinical disciplines during the second, third, and fourth years.

Comprehensive Case 485.

The staff. Fourth year.

Each student is assigned cases for which he performs all the dental services or is responsible for the treatment (total patient care). The presentation to a board of review of a case after treatment planning is required. The services are carried out in the various clinical divisions. The oral examination accompanying the inspection of the completed case aims to correlate the teaching of the entire course.

Temporomandibular Joint Disorders 484.

The staff. Fourth year.

Lectures, clinical demonstrations, and conferences on the principles of the diagnosis and treatment of disorders of the temporomandibular joints.

MEDICINE

Medicine 378. General survey of medicine

Professor Cosgriff and the staff. Third year.

The important aspects of internal medicine, with reference to fundamentals as well as recent diagnostic and therapeutic advances. Particular emphasis on over-all medical problems and their implications for dentistry.

MICROBIOLOGY

Microbiology 151. General medical microbiology and immunology

The staff. First year.

Laboratory and conferences.

Microbiology 152. Principles of microbiology, immunology, and epidemiology

The staff. First year.

This course is similar to *Microbiology 105F* in the College of Physicians and Surgeons. Lectures on oral microbiology are substituted for several of those of the medical series.

OPERATIVE DENTISTRY

Operative Dentistry 231. Introductory operative dentistry

Professors Boelstler, Brzustowicz, and Scrivani, and the staff. Second year.

Lectures and laboratory exercises on the fundamentals of operative dentistry, including the etiology of dental caries and the biological approach to the technical procedures in the restoration of teeth. Periods of clinical observation are an integral part of the course.

Operative Dentistry 333. Operative clinical practice

Professor Cain and the staff. Third year.

Introduction to the clinical practice of operative dentistry. Lectures, demonstrations, and clinical experience in the recognition of disease and related conditions. Prevention, treatment planning, and restoration to form and function.

Operative Dentistry 434. Advanced clinical practice

Professor Cain and the staff. Fourth year.

A continuation of *Operative Dentistry 333*, with the addition of seminars in the special problems of operative dentistry with emphasis on total patient care.

ORAL BIOLOGY

Oral Biology 200. Oral microscopic anatomy and embryology

Professor Moss-Salentijn and the staff. Second year.

This course is the same as *Anatomy 115*.

Lectures, conferences, and laboratory.

Oral Biology 210. Biology of the oral tissues and secretions

Professor Smith and the staff. Second year.

Lectures and seminars intended to supplement the more general information and concepts of the first-year basic science courses with specific material related to dentistry. Topics include the biochemical nature of the oral tissues and secretions; neuromuscular mechanisms involved in mastication and deglutition; special sensation; pain; oral microcirculation; and the microbiological, viral, and immunological aspects of oral disease.

Oral Biology 215. Advanced anatomy of the head and neck

Professor Moss and the staff. Second year.

Lectures and laboratory.

OROFACIAL GROWTH AND DEVELOPMENT

Orofacial Development 201. Oral anatomy and occlusion

Professors Junemann and Horowitz, and the staff. Second year.

Lectures, seminars, and laboratory sessions in oral anatomy, dental morphology, and occlusion. A joint course of the divisions of orofacial development and oral biology.

Orofacial Development 202. Growth and development of the dentition

Professor Horowitz. Second year.

Lectures in the development of the dentition, including embryogenesis, timing and sequence of calcification, eruption, development of occlusion, and changes in the dentition with age.

Orofacial Development 203. Human genetics in dentistry

Professors Chabora and Horowitz. Second year.

Lectures designed to familiarize the student with principles of Mendelian heredity, cell division, inborn errors of metabolism, chromosomal anomalies, and the genetics of orofacial syndromes.

Orofacial Development 204. Statistics

Professor's Chabora, Dworkin, and Horowitz. Second year.

Lectures and programmed instruction in basic biostatistics, including measures of central tendency, regression, correlation, Chi-Square, and comparison of samples.

Orofacial Development 400. Senior elective

Professor Horowitz and the staff. Fourth year.

An individualized study program in child development, with special emphasis on growth patterns of

the dentofacial complex. The child development laboratory provides an opportunity for student experience in research design, exploration of genetic factors in dental anomalies and disease, practical applications of statistical analytic techniques, and clinical observation of various craniofacial birth defect syndromes.

ORTHODONTICS

Orthodontics 341. Principles of orthodontics

Professor Di Salvo and the staff. Summer II and third year.

Lectures, seminars, laboratory, and clinic. Orthodontic fundamentals, with special emphasis on prevention of malocclusion by the early recognition and correction of the predisposing factors. Laboratory time is devoted to the designing and construction of fixed and removable appliances used as space maintainers. In addition, simple appliances used in tooth guidance procedures, which are considered to be within the province of the general practitioners of dentistry, are constructed. Students obtain clinical experience in the use of appliances constructed in the laboratory. They treat patients with orthodontic problems which require either preventive measures or minor tooth movement.

Orthodontics 441. Senior elective

Professor Di Salvo and the staff. Fourth year.

Seminars and laboratory and clinic participation. An intensive, in-depth exposure to the etiology, diagnosis, case analysis, treatment planning, and clinical management of problems of malocclusion.

PATHOLOGY

Pathology 150. General and special pathology

Professors Blanc, Branwood, Cowen, Duffy, Gambino, Godman, King, Lane, Lattes, Osserman, Richart, Stoerk, Vogel, and Wilens. First year.

Same course as that given to medical students, including lectures, seminars, and laboratories, with emphasis on gross and microscopic examination of tissues, correlated with clinical findings.

Pathology 246. Oral pathology

Professor Blake and the staff. Second year.

Lectures, demonstrations, conferences, and laboratory work on diseases of the jaws, teeth, and soft tissues about the oral cavity. Emphasis on clinical manifestations of the various diseases.

PEDODONTICS

Pedodontics 201. Fundamentals of pedodontics and preventive dentistry

Professor Rosenstein. Summer II.

Lectures on basic aspects of pedodontics and the role of pedodontics in preventive dentistry. The several phases of dental service for children, mean ages for various stages of normal dental growth and development, the significance of dental service, and areas of dental service involving preventive measures. Also included is preparation for the technique course: anatomical details of primary teeth and principles of operative procedures for the primary teeth.

Pedodontics 202. Technique course

Professors Berlin and Rosenstein, and the staff. Summer II.

Demonstration and technique exercises in special operative procedures for compound-cavity preparation and filling, and full-crown coverage for primary teeth on technique models using newer types of cutting instruments.

Pedodontics 301. Preventive dentistry

Professor Rosenstein. Third year.

Lectures on the principles of prevention of dental and oral disease and disorders in children: dental caries, the common oral soft-tissue lesions, disorders of occlusion in the developing dentitions, and elimination of unfavorable habits involving the mouth. Constitutional and systemic factors (including nutrition) are included, as well as local oral factors. In each of these areas specific recommendations are made for elimination of unfavorable factors and clinical application of positive preventive measures. Pertinent literature is assigned and reviewed.

Pedodontics 302. Theory and practice of pedodontics

Professor Rosenstein. Third year.

Lectures and conferences on the factors involved in basic treatment planning for children and requisite background knowledge: clinical aspects of the various stages of dental development, child evaluation and management, purposes and essentials of the taking of pedodontic histories, home care, special operative procedures involving pulp therapy for conservation of children's teeth, management of traumatized teeth, and special considerations in dental care for children with handicapping conditions.

Pedodontics 303. Pedodontics clinic

Professor Rosenstein and the staff. Third year.

Clinical practice in total management of the child patient and application of the principles and procedures presented in the lecture courses: taking of histories, prophylaxis, special operative procedures for prevention of premature loss of children's teeth, and appliance therapy for space management in developing dentitions. Application of knowledge of dental development, child development, and preventive dentistry is emphasized in evaluation of the child dental patient and in treatment planning. Assignments to clinic also include short seminars on special clinical problems related to phenomena of development.

Pedodontics 401. Senior elective

Professors Berlin, Rosenberg, Rosenstein, and Wolmer. Fourth year.

Clinical practice in dentistry for children with more complicated management problems than those seen in third-year clinic. Assignments to special clinic and affiliated facilities for training with special inpatients and outpatients. Weekly seminars for case presentation and discussion of advanced pedodontic problems.

PERIODONTICS**Periodontics 201. Periodontics lectures, seminars, and clinic**

Professor Gottsegen and the staff. Second year.

Lectures and seminars in the diagnosis, etiology, and treatment of periodontal diseases. Clinical practice in examination and documentation of clinical findings in the periodontal patient, prophylaxis, subgingival scaling and root planing, teaching and motivating patients to perform personal oral hygiene. The fundamentals of preventive periodontics are covered.

Periodontics 301. Periodontics lectures, seminars, and clinic

Professor Gottsegen and the staff. Third year.

Lectures and seminars on periodontal surgery, occlusal traumatism, selective tooth grinding, specific periodontal diseases and infections, systemic background factors and interrelationships, methods of temporary stabilization of teeth, introduction to treatment planning, and case presentation both in seminar and clinic. Clinical practice in subgingival curettage, simple surgical techniques, occlusal adjustment by selective grinding, and temporary stabilization.

Periodontics 401. Periodontics lectures and seminars

Professor Gottsegen and the staff. Fourth year.

Lectures and seminars tracing the historical development of treatment methods, advanced surgical techniques, special therapeutic problems, fixed and permanent splinting and restorative dentistry for the periodontally involved dentition. A review of periodontal histopathology related to the clinical experience, treatment planning, case management, and case presentation.

Periodontics 402. Periodontics clinic

Professor Gottsegen and the staff. Fourth year.

A continuation of *Periodontics 301*. Advanced periodontal surgical techniques and the clinical management of more complex cases.

Periodontics 403. Senior elective

Professor Gottsegen and the staff. Fourth year.

One seminar and choice of one, two, or three clinic sessions a week. Students participate in seminars with subject material researched through literature review and critical analysis. Clinic experience is utilized to enlarge and enhance the usual four-year periodontics program through the assignment of nine difficult and complex cases of diagnosis, treatment planning, and therapeutic management. Limited enrollment.

Periodontics 404. Honors program

Professor Gottsegen and the staff. Fourth year.

Limited enrollment.

Prerequisite: the instructor's permission.

Four full days a week in periodontics and one day a week in general restorative dentistry for two terms. Honors students in periodontics follow the program of, and join with, the first-year postgraduate students in their classes, seminars, and clinics, with the exception of the two half-days in restorative dentistry.

PHARMACOLOGY**Pharmacology 250. Introduction to pharmacology**

The staff. Second year.

Lectures on a wide variety of drugs. The effects of many of these drugs on man and lower animals are demonstrated in the laboratory. Emphasis on general pharmacological principles to assist the student in the rational use of drugs and in the evaluation of new remedies as they may be introduced.

PHYSIOLOGY**Physiology 150. Mammalian physiology**

Professor Nocenti and the staff. First year.

Lectures, conferences, demonstrations, and laboratory. The function of the various organ systems of the mammalian body and their interrelations.

PREVENTIVE DENTISTRY**Preventive Dentistry 200. Principles of preventive dentistry**

Professor I. D. Mandel and the staff. Second year.

Lectures and seminars on the etiology, histopathology, and prevention of the plaque diseases—caries and periodontal diseases.

Preventive Dentistry 201. Laboratory and clinical exercises

Professors I. D. Mandel, Weinstein, Wotman, and Zengo. Second year.

The techniques for studying plaque, calculus, saliva, and gingival fluid. Preventive aspects of malocclusion and oral lesions; nutrition and dietary analysis; patient education and motivation for prevention.

Preventive Dentistry 300. Practice of preventive dentistry

Professor Fine and the staff. Third year.

Clinical training in the procedures of preventive dentistry, with emphasis on the plaque diseases.

Preventive Dentistry 400. Senior elective

Professor I. D. Mandel and the staff. Fourth year.

Seminars and research.

PROSTHODONTICS**Prosthodontics 200. Preclinical prosthodontics**

Professor Uccellani and the staff. Second year.

Lectures and demonstrations on theory and procedures in the fabrication of fixed, removable, and complete prostheses. Wherever necessary for the learning of manipulative skills in preparation for clinical objectives, procedures are carried out on models in the laboratory by the student. Periods of clinical observation are an integral part of the course.

Prosthodontics 300. Core clinical prosthodontics

Professors Lucca and Uccellani, and the staff. Third year.

Lectures, demonstrations, and clinical experience in the biological principles and practice of the more

simple cases in all phases of prosthodontics—fixed and removable partial dentures and complete dentures.

Prosthodontics 400. Advanced prosthodontics

Professor Lucca and the staff. Fourth year.

Lectures, demonstrations, seminars, and advanced clinical experience in the biologic principles and practice of fixed and removable dentures. Lectures on different concepts of occlusion and other schools of thought on various aspects of prosthodontics are given by the staff and guest lecturers.

Prosthodontics 401. Surgical prosthesis

Professor Bruno. Fourth year.

Lectures and technical procedures in maxillofacial and surgical prosthesis.

Prosthodontics 402. Senior elective

Professors Lucca and Bruno, and the staff. Fourth year.

Three clinic sessions and one seminar a month. In most instances, students may select the kind of advanced clinic cases they wish to undertake. For example, one area might be maxillofacial prosthodontics with the opportunity to attend hospital cleft-palate conferences. Seminars include literature review and discussions of current prosthodontic topics.

PSYCHIATRY

Psychiatry 100, 200, and 300. Human behavior

Professor Schoenberg and the staff. First, second, and third years.

Psychosocial aspects of patient care. Lectures, demonstrations, and seminars.

STOMATOLOGY

Diagnosis and Radiology 200. Diagnosis and radiology lectures

Professors Donovan and Budowsky, and the staff. Second year.

Lectures and discussions on history, physics, and electronics of radiology; studies on radiobiology, radiotherapy, radiation hazards, and protections; radiographic techniques and processing. Fundamentals of radiographic interpretation; diagnosis of pulpal diseases and associated abnormalities.

Diagnosis 201. Clinical stomatology conferences

Professors E. V. Zegarelli, Marder, Kutscher, and D. J. Zegarelli, and the staff. Second, third, and fourth years.

Required for third- and fourth-year and postdoctoral students, but second-year students and members of the staff are urged to attend.

Presentation by students of case histories of patients with diseases of the mouth and jaws which are of diagnostic interest and importance. General discussion of each case by and with the audience is encouraged.

Diagnosis 310. Clinical cancer training

Professors E. V. Zegarelli, Kutscher, and Marder, and the staff. Third year.

Lectures and clinical experience in the diagnosis and treatment of tumors of the head, face, and neck. The student is rotated for one week through the otolaryngology, radiotherapy, dermatology, and maxillofacial prosthesis clinics. Operating room experience in the surgical management of tumors is included.

Diagnosis 312. Diagnosis lectures and clinic

Professors E. V. Zegarelli, Marder, and D. J. Zegarelli, and the staff. Third year.

Lectures and discussions on diagnostic methods and techniques, diseases of the maxilla and mandible, tumors of the mouth, and diseases of the soft tissue. Clinical practice in mouth examination, taking of histories, diagnosis of mouth and jaw diseases, and treatment planning.

Diagnosis 413. Diagnosis clinic

Diagnosis staff. Fourth year.

Clinical practice in diagnostic procedures and techniques, comprehensive diagnosis including treatment planning, and clinical and laboratory diagnosis of diseases of the mouth and jaws.

Radiology 367. Radiology clinic

Professors Donovan and Budowsky, and the staff. Third year.

Clinical practice in intraoral and extraoral radiography; demonstrations of temporomandibular joint panoramic and laminographic techniques.

Oral Medicine 386.

Professors E. V. Zegarelli, Marder, and Kutscher. Third year.

Lectures on the management and treatment of selected diseases of the mouth and jaws including choice of drugs, modes of administration, contraindications, and side reactions. The systemic implications of oro-dental therapy, the dental management of systemically ill patients, and other medico-dental relationships are emphasized.

Oral Medicine 400. Senior elective

Professors E. V. Zegarelli, L. Mandel, Minervini, and D. J. Zegarelli. Fourth year.

Elective course for a limited number of students. Composed of an integrated program of advanced clinical training and experience in allied fields of diagnosis/oral medicine, oral pathology, and oral surgery.

SURGERY**Surgery 200. Anesthesiology**

Professors Marder and Stern. Second year.

Lectures and demonstrations in local and general anesthesia and principles of sedation.

Surgery 201. Introduction to oral surgery

Professors L. Mandel, Minervini, and Baurmash, and the staff. Second year.

Lectures and demonstrations to prepare students for clinical oral surgery.

Surgery 301. Basic oral surgery

Professors L. Mandel, Minervini, and Loscalzo, and the staff. Third year.

Lectures and demonstrations in minor oral surgery. The principles of oral surgery are considered as applied to the total oral surgical environment.

Surgery 302. Clinical practice of basic oral surgery

Professors L. Mandel, Minervini, and Loscalzo, and the staff. Third year.

Clinical application of the principles of basic oral surgery.

Surgery 402. Clinical practice of basic oral surgery

Professors L. Mandel, Minervini, and Loscalzo, and the staff. Fourth year.

Opportunities to perform the more advanced clinical procedures in ambulatory oral surgery.

Surgery 403. Clinical clerkship at Roosevelt Hospital

Professor Linz and the staff. Fourth year.

Assignment of students to Roosevelt Hospital supervised by the hospital dental service.

Surgery 404. Senior elective

Professors L. Mandel and Minervini, and the staff. Fourth year.

An elective program designed for the student with a special interest in oral surgery.

Surgery 405. Honors program

Professors L. Mandel and Minervini, and the staff. Fourth year.

For the student who desires advanced training in oral surgery, oral medicine, and oral pathology.

Summary of the Program

Because of revisions in curriculum, the following summary reflects the program for the year 1973-1974.

FIRST YEAR (CLASS OF 1977)

Anatomy 150
Anatomy 151
Anatomy 153
Biochemistry 150
Correlation Clinics 100

Introduction to Dentistry 100
Microbiology 151 and 152
Pathology 150
Physiology 150
Psychiatry 100

SECOND YEAR (CLASS OF 1976)

Anatomy 115
Community Health 202
Diagnosis 201
Diagnosis and Radiology 200
Endodontics 232
Introduction to Dentistry 200
Operative Dentistry 231
Oral Biology 200*, 210, and 215
Orofacial Development 201, 202,
203, and 204

Pathology 246
Pedodontics 201 and 202
Periodontics 201
Pharmacology 250
Preventive Dentistry 200 and 201
Prosthodontics 200
Psychiatry 200
Statistics and Epidemiology 200
Surgery 200 and 201

*Identical to *Anatomy 115*.

THIRD YEAR (CLASS OF 1975)

Anatomy 352
Community Health 300 and 301
Dental Auxiliary Utilization 300
Dental Materials 327
Diagnosis 201
Diagnosis 310
Diagnosis 312
Endodontics 335
Medicine 378
Operative Dentistry 333

Oral Medicine 386
Orthodontics 341
Pedodontics 301, 302, and 303
Periodontics 301
Preventive Dentistry 300
Prosthodontics 300
Psychiatry 300
Radiology 367
Surgery 301 and 302

FOURTH YEAR (CLASS OF 1974)

Comprehensive Case 485
Dental Auxiliary Utilization 400
Diagnosis 201
Diagnosis 413
Endodontics 436
Operative Dentistry 434
Oral Medicine 400
Orofacial Development 400*
Orthodontics 441*
Pedodontics 401*
Periodontics 401 and 402
Periodontics 403*

Periodontics 404*
Preventive Dentistry 400*
Prosthodontics 400
Prosthodontics 401
Prosthodontics 402*
Surgery 402
Surgery 403
Surgery 404*
Surgery 405*
Systems of Dental Practice 400 and 401
Temporomandibular Joint
Disorders 484

*Elective-honors course.

REQUIRED SUMMER CLINICS

These sessions are held during June.

Admission, Registration and Expenses

All applicants receive consideration for admission without regard to race, creed, color, national origin, or sex. Candidates should apply after July 1 during the academic year preceding that for which they seek admission, on application forms obtained from the Committee on Admissions, School of Dental and Oral Surgery, 630 West 168th Street, New York, N.Y. 10032. Because the School is a participant in the American Association of Dental Schools Application Service (AADSAS), all written requests are acknowledged by transmittal of the required forms and information necessary to complete application through this service. Each application must be accompanied by a check or money order for \$20, made payable to Columbia University, to cover the cost of processing the application. This fee is not returnable and is not credited toward tuition.

Required preparation: three full years at an acceptable college of arts and sciences, including the following courses (8 points of each): English composition and literature, physics, biology, inorganic chemistry, and organic chemistry.

Recommended preparation: additional courses in chemistry, advanced courses in biology, courses in mathematics, foreign languages, sociology, history, and the fine and industrial arts.

It is not necessary to complete the academic requirements before applying, but all requirements must be completed before registration. The admission of a student depends primarily on his preparation and intellectual capacity, but it also depends upon judgments of his character and health. Preference is given to applicants with bachelor's degrees from accredited colleges of arts and sciences.

DENTAL APTITUDE TESTS

All applicants must take the Dental Aptitude Tests, which are conducted by the Council on Dental Education at various testing centers throughout the United States and Canada. For further information apply directly to the Division of Educational Measurements, Council on Dental Education of the American Dental Association, 211 East Chicago Avenue, Chicago, Ill. 60611.

ACCEPTANCE FEE

Within one month after he receives notice of his acceptance, an applicant must notify the Committee on Admissions that he intends to enroll and must send a check or money order for \$200 made payable to Columbia University. If he registers

for the term to which he has been admitted, the fee will be credited toward his tuition; if he does not register, the fee will not be refunded.

COMBINED COURSES

With Barnard College. Under the "professional option" plan, students from Barnard College may receive the Bachelor of Arts degree from Barnard after the completion of three years of undergraduate work and the first year in the School of Dental and Oral Surgery. To be eligible for this privilege, before entering the School the student must have completed at Barnard 90 points of academic work (including all specific requirements), a major of 28 points, and the major examination or thesis.

With the School of General Studies. Students from the School of General Studies may exercise the professional option after the completion of 94 points (including all courses prescribed for the Bachelor of Science degree), not less than 64 of which must have been taken at Columbia University.

► REGISTRATION

Before attending classes, students must register in person at the Office of the Registrar, Room 3-412, College of Physicians and Surgeons, 630 West 168th Street, New York, N. Y. on September 4-5, 1973. Registration consists of filling out forms required for University records and paying the fees. Late registration requires the approval of the Dean of the School and the payment of a late fee (see below).

All students will be asked to give Social Security numbers when registering in the University. Those who do not now have a number should obtain one from their local Social Security Office well in advance of registration.

► AUDITING COURSES

Degree candidates in good standing who are enrolled for 15 or more points in the current term may audit one or two courses in any division of the University without charge by filing a formal application in the Registrar's Office (P&S, Room 3-412) during the change-of-program period. Applications require (a) the certification of the Registrar that the student is eligible to audit and (b) the approval of the dean of the school in which the courses are offered.

Elementary language courses, laboratory courses, and seminars are not open to auditors; other courses may be closed because of space limitations. In no case will an audited course appear on a student's record, nor is it possible to turn an audited course into a credit course by paying the fee after the fact.

► REGULATIONS

Each person whose registration has been completed will be considered a student

of the University during the term for which he is registered unless his connection with the University is officially severed by withdrawal or otherwise. No student registered in any school or college of the University shall at the same time be registered in any other school or college, either of Columbia University or of any other institution, without the specific authorization of the dean or director of the school or college of the University in which he is first registered.

The privileges of the University are not available to any student until he has completed his registration. Since, under the University statutes, payment of fees is part of registration, no student's registration is complete until his fees have been paid. No student is permitted to attend any University course for which he is not officially registered unless he has been granted auditing privileges. No student may register after the stated period unless he obtains the written consent of the proper dean or director.

ATTENDANCE AND LENGTH OF RESIDENCE

No degree will be granted to a student who has not registered for and attended at the School courses of instruction equivalent to at least four academic years of full-time work. No advanced standing is granted.

Students are held accountable for absences incurred owing to late enrollment.

Any student whose religious duties conflict at any time with academic requirements should apply to his dean or director for an equitable solution. It is the policy of the University to respect its members' observance of major religious holidays. Those responsible for the scheduling of the required academic activities or essential services have been asked to avoid conflict with such holidays as much as possible. Such activities include examinations, registration, and various deadlines that are a part of the academic calendar.

Where scheduling conflicts prove unavoidable, no student will be penalized for absence due to religious reasons, and alternative means will be sought for satisfying the academic requirements involved. If a suitable arrangement cannot be worked out between the parties concerned, students and instructors should consult a religious counselor or the office of the appropriate dean or director.

A student in good standing may, for a valid reason, be granted a leave of absence by the dean or director of the division of the University in which he is registered.

ACADEMIC DISCIPLINE

The continuance of each student upon the rolls of the University, the receipt by him of academic credits, his graduation, and the conferring of any degree or the granting of any certificate are strictly subject to the disciplinary powers of the University.

HONOR CODE

Academic and intellectual integrity are accepted principles in the dental profession. An Honor Code, created and administered by the student body, is

the formal acknowledgment of this understanding at the School of Dental and Oral Surgery. Each student is expected to abide by it.

► FEES

The following fees are prescribed by statute for the full program for one year for a candidate for the D.D.S. degree and are subject to change at any time at the discretion of the Trustees. Fees for a partial program are assessed by the Registrar as provided by the University statutes.

Tuition	\$3,180.00
Student health and hospital fee for all full-time students, per academic year—(see page 26)	103.00

APPLICATION FEES AND LATE FEES

Application for admission	\$20.00
Application for each special examination	10.00
For renewal of application for a degree	1.00
For late registration	10.00
For late application, or late renewal of application, for a degree	10.00

FEES FOR REPEATED COURSES

A student who is required to repeat the work for any one year must pay the full tuition and fees.

WITHDRAWAL AND ADJUSTMENT OF FEES

A student who decides to withdraw from the University must notify the Registrar in writing at once. If he is under twenty-one years of age, his parent or guardian must first give consent in writing to the Registrar. He will be given an honorable discharge provided he is in good academic standing and not subject to discipline.

Any adjustment of the tuition that the student has paid is reckoned from the date on which the Registrar receives the student's written notification. The student health and hospital fee, application fees, late fees, and special fees are not subject to rebate. Up to and including the second Saturday after the first day of classes, tuition will be retained in the following amount:

Full-time study	\$50.00
Part-time study	25.00

After the second Saturday after the first day of classes in the term, the above amount is retained, plus an additional percentage of the remaining tuition (as indicated in the schedule below), for each week, or part of a week, of the term up to the date on which the student's written notice of withdrawal is received by the Registrar.

ADJUSTMENT SCHEDULE

	<i>Minimum Fees Retained</i>	<i>Percentage of Remaining Tuition Retained</i>
Second Saturday after first day of classes	\$25 or \$50	0
Week following second Saturday after first day of classes	25 or 50	10
Second following week	25 or 50	20
Third following week	25 or 50	30
Fourth following week	25 or 50	45
Fifth following week	25 or 50	60
Sixth following week	25 or 50	75
Seventh following week	25 or 50	90
Eighth following week	25 or 50	100 (no adjustment)

STUDENT HEALTH AND HOSPITAL FEE

The student health and hospital fee is used to pay the annual premium of the Associated Hospital Service of New York for hospital insurance and to pay part of the cost of the Student Health Service. Students who already have hospital insurance pay only \$40.00.

Daily office hours are held by the Student Health Service, 2005 Black Medical Research Building. Members of the Health Service are available to attend ill students if they live near the Medical Center. Students who require hospitalization are cared for either in the wards of the Medical Center or elsewhere under the terms of an insurance policy of the Associated Hospital Service of New York.

RENEWAL OF APPLICATION FOR THE D.D.S. DEGREE

An application for the D.D.S. degree terminates at the next regular time for the issuance of diplomas subsequent to the date of filing, but it may be renewed for a fee of \$1 each time that the candidate chooses to come up for consideration.

REQUESTS FOR TRANSCRIPTS

Transcripts may be requested by writing to the Office of the Registrar, P&S 3-412. Official transcripts must be sent by the University directly to an official address such as another university, a college, a business firm, or a government agency. However, a student may request that an unofficial transcript (stamped "Student Copy") be sent to him. There is a charge of \$1 for each transcript requested except those which are sent between offices of Columbia University.

► ESTIMATED EXPENSES

The approximate cost of attending the School for an academic year of nine months is as follows:

	<i>Average</i>	<i>Minimum</i>
Tuition and fees for a full program	\$3,283.00	\$3,220.00
Room in one of the residence halls	735.00	525.00
Board in a University dining room	850.00	700.00

The average and minimum figures for board include the approximate cost of meals not provided under the weekly board plans; holiday periods are not included (see "Housing," pages 30-31).

In addition, each student should budget for such items as clothing, laundry and dry cleaning, travel, dues to organizations, amusements, and sundries. Those who live at home will probably spend about \$200 for lunches during the year.

BOOKS AND EQUIPMENT

Books. The approximate cost of books will be: in the first year, \$190; in the second year, \$300; in the third year, \$265; in the fourth year, \$120. Book lists are posted for each class during registration week. Books may be purchased from the Medical Center Bookstore on the first floor of the College of Physicians and Surgeons. The store is maintained expressly for the convenience of the students and staff of the Medical Center schools and hospitals.

Instruments and Supplies. Each student must buy, from the University, the original package outfit of instruments specified in the official instrument list. Unauthorized or incomplete equipment will not be accepted by the instructors. The estimated cost of instruments for students entering in September 1973, will be approximately \$3,000 over the four-year period. Arrangements have been made with the Bursar to spread payments evenly over the four-year period. For the 1973-1974 academic year, the following schedule of payments will apply: Entering students will pay \$750 for each of the first three years and the balance in the fourth year. Second-year students will pay \$750 for each of the second and third years and the balance in the fourth year. Third-year students will pay \$750 for the third year and the balance in the fourth year. The estimated balance which fourth-year students will have to pay is \$680. Variations in these figures may be necessary because of price fluctuations or new developments. Instruments must be paid for at the beginning of the academic year, but students who can demonstrate their need may borrow from the University or from the Health Professions Loan Program to defray the cost. These are *estimates* and are subject to change. Students are asked *not* to present checks made out in advance and based upon these figures.

Microscopes. During the first and second years microscopes are provided by the School for a rental of \$15 per semester. If a student prefers to provide his own microscope, he must have it approved by the Department of Anatomy. It is recommended that the microscope be of standard make equipped with: (a) quadruple nose piece; (b) Abbe or variable focus condenser; (c) 4x, 10x, 43x objectives; (d) 96x oil immersion lens; (e) 10x wide field eye piece; (f) mechanical stage; (g) attached lamp; (h) carrying case. The cost of a new microscope

ranges from \$500 to \$750, and of a reconditioned microscope from \$200 to \$500. Arrangements for approval and for purchase or rental should be made before registration for the opening term.

Lockers. Each entering student is assigned a locker; he must use a combination lock as prescribed by the School.

► FINANCIAL AID

Students may apply for loans and grants through the Dean's Office. Grants are awarded only in combination with loans; any student who can demonstrate his need is eligible to apply. Application forms are issued by the Dean's Office. Financial aid programs are administered without regard to race, creed, color, national origin, or sex.

Student loans are available on the basis of financial need to full-time Columbia degree candidates to partially cover normal educational and living expenses for the year in which the loan is granted. The maximum amount that a student who is a citizen or a permanent resident may borrow in any one year from all sources, including non-University programs, is \$3,000. The University reserves the right to assign the funds from which loans are granted. Students who are United States citizens and residents of states having loan plans are urged to apply to these sources. Federal Health Professions loan funds are also available. To insure an early decision, applications for all loans should be filed for the autumn term by June 1; for the spring term by December 1.

The heavy schedule of the School makes it difficult for students to undertake outside part-time work during the academic year. If at all possible, other financial arrangements should be made.

NEW YORK STATE SCHOLAR INCENTIVE AWARDS

Any student who has been a legal resident of New York State for the preceding year is entitled to a Scholar Incentive Award for each term in which he is registered as a full-time degree candidate. The amount of this award is based upon the net taxable balance of his income and the income of those responsible for his support, as reported on the New York State income tax return for the previous calendar year. Further information and application forms may be obtained from the Department of Education, Regents Examination and Scholarship Center, Albany, N.Y. 12201. Application for awards should be filed three months in advance of the beginning of the term for which the grant is to apply.

AWARDS AND PRIZES

Alpha Omega Scholarship Award. A plaque presented to the graduating student (not necessarily an Alpha Omegan) with the highest scholastic average for his four years of dental studies. First awarded in 1949.

American Academy of Oral Medicine. A certificate and a subscription to the *Journal of Oral Medicine*, awarded to a fourth-year student for excellence in this field.

American Academy of Gold Foil Operators. Certificate awarded to a fourth-year student for excellence in gold foil technique.

American Academy of Dental Radiology. A certificate awarded to a fourth-year student for excellence in this field.

American Academy of Periodontology. A student award certificate and a one-year subscription to the journals published by The American Academy of Periodontology, awarded to an outstanding student in periodontics.

American Association of Oral Pathology. A certificate to the graduating student who has shown the most interest, accomplishment, and promise in the field of oral pathology.

American Association of Orthodontists. A certificate awarded to a student showing exceptional interest and special aptitude in orthodontics.

American College of Dentists, New York Section. An award of \$100 and a plaque or scroll. Presented to a third-year student who is a good all-around student, a member of the student section of the American Dental Association, and who exhibits leadership.

American Dental Society of Anesthesiology, Inc. An award certificate and a one-year subscription to *Anesthesia Progress*, awarded to a fourth-year student who has shown outstanding ability or interest in the field of pain control.

American Society of Dentistry for Children. A certificate, one year of membership in the Society, and a one-year subscription to *The Journal of Dentistry for Children*, awarded to a fourth-year student.

William Bailey Dunning Award for Excellence in Periodontology. A medal awarded to the graduating student who is the most proficient in periodontology. First awarded in 1957.

Ella Marie Ewell. A medal awarded to the graduating student who is the most proficient in some subject of dentistry.

International College of Dentists, U.S.A. Section. A plaque presented to the graduating student who has shown the most professional growth and development during his years of dental study.

Long Island Academy of Odontology. A certificate awarded to a student showing exceptional proficiency in preventive dentistry.

Arthur Merritt Award. A certificate and award of \$50 to the outstanding fourth-year student in periodontics.

Prize for Excellence in Operative Dentistry. A plaque awarded by the staff of the Section of Operative Dentistry to the graduating student who has shown the greatest proficiency in operative dentistry.

Certificate for Excellence in Pedodontics. A plaque awarded to a graduating student for excellence in pedodontics. Established by the Class of 1929.

Psi Omega Fraternity Award. A plaque presented by the Gamma Lambda Chapter to the graduating student who has displayed exemplary professional conduct.

Rowe-Wiberg Medal. An award made by the Association of Dental Alumni to the graduating student who has shown the greatest proficiency in prosthetic dentistry.

Women's Auxiliary to the 11th District Dental Society. An award of \$150 to a deserving fourth-year student who is a resident of the Borough of Queens.

► HOUSING

ON THE UNIVERSITY CAMPUSES

The University provides limited housing for undergraduate and graduate men and women who are regularly registered either for an approved program of full-time academic work or for work being done on a doctoral dissertation. The rates below are for the academic year 1973–1974.

MORNINGSIDE CAMPUS

Rates in the residence halls (Harmony, Hudson, John Jay, Johnson, McBain, Ruggles, and 70 Morningside Drive) for single and double rooms range from \$525 to \$875 per person, with \$737 the average rate. Meals are available in the John Jay or Johnson Hall dining rooms on weekdays when classes are in session. These may be paid for in cash or through subscription to a board plan. Inquiries from men students should be directed as early as possible to the Residence Halls Office, 125 Livingston Hall, New York, N.Y. 10027. Inquiries from women students should be directed as early as possible to Johnson Hall, 411 West 116th Street, New York, N.Y. 10027.

ANNA C. MAXWELL HALL

Anna C. Maxwell Hall is the residence of the Department of Nursing, but rooms are also available to men and women registered in other full-time programs at the Medical Center. Maxwell Hall overlooks the Hudson River, and is connected by underground passage to other buildings of the Medical Center. Reception rooms, a snack bar, a reading room, and recreational facilities, including a swimming pool, are in this building. Each student occupies a single room. Assignment of rooms is for the term. All undergraduate students are required to pay a comprehensive fee for room and board, which includes breakfast, lunch, and dinner, Monday through

Friday, excluding holiday periods. The inclusive fee for the academic year, September through May, is \$1,120, half of which is payable each term at registration. Graduate students may elect the comprehensive plan or may pay \$97.50 a month for room alone. Apply directly to the Director of Residence, Maxwell Hall, 179 Fort Washington Avenue, New York, N.Y. 10032.

BARD HAVEN

Housing for married students is available at Bard Haven, 100 Haven Avenue, New York, N.Y. 10032, near the Medical Center. Rates for air-conditioned unfurnished apartments range from \$160 to \$200 a month. Twenty-four-hour doorman service is provided. Students are urged to apply for an apartment as soon as they apply for admission to the School. Requests for further information and application forms should be directed to Miss McCarthy at the Office of University Housing, 400 West 119th Street, New York, N.Y. 10027.

OFF CAMPUS

Students who wish to live in furnished rooms off campus may consult the Registry of Off-Campus Accommodations, 401 West 117th Street, Columbia University, New York, N.Y. 10027, for information.

International House, a privately owned student residence near the campus, has accommodations for about five hundred graduate students, both foreign and American. Rates include a continental breakfast, linen and maid service, and membership and program fees. They are \$92 to \$117 a month for the academic year. A cafeteria, recreational facilities, and a varied program are available to members. To be eligible for admission a student must be at least twenty-one years old and must be registered for at least 12 points or for a program of full-time research. Inquiries should be addressed to the Committee on Admissions, International House, 500 Riverside Drive, New York, N.Y. 10027.

► STUDENT ORGANIZATIONS

OMICRON KAPPA Upsilon

Epsilon Epsilon chapter of Omicron Kappa Upsilon, national honorary fraternity, was chartered in the School of Dental and Oral Surgery in 1934. The purpose of the fraternity is to recognize and honor a maximum of 12 percent of the members of the graduating class on the basis of scholarship, character, and potential for future professional growth and attainments.

THE WILLIAM JARVIE SOCIETY

The William Jarvie Society for Dental Research is a nonsecret, dental honor society, membership in which is based on scholarship and interest in dental research, and for which second-, third-, and fourth-year students are eligible. The society was

organized in the School of Dental and Oral Surgery in 1920 and named after Dr. William Jarvie because of his wide interest in the promotion of dental research. The society aims to promote the spirit of research among the students.

THE STUDENT DENTAL ASSOCIATION

The Student Dental Association of Columbia University was established in 1960 to provide a professional and social forum in which the entire student body would participate. The general program of this organization is patterned after the program of local dental societies, in which the graduate dentist makes his contribution to the organized dental profession. The undergraduate dental student is exposed to the democratic process of organization function, policy development, and programming as he meets his responsibility for supporting the program of his association.

► GRADING SYSTEM AND REQUIREMENTS FOR PROMOTION

The following grading system is used: A, excellent; B, good; C, fair; F, failure.

A student may be admitted to the second, third, or fourth year of the dental curriculum only upon the recommendation of the officers of instruction under whom he has studied during the preceding year.

The School reserves the right to refuse readmission or promotion to any student who is believed for any reason to be unsuited to the conditions of study in the School.

Students are classified for readmission or promotion under the following categories: (1) recommended for advancement; (2) recommended for readmission to the same class; (3) recommended neither for advancement nor for readmission to the same class.

► GRADUATION

The degree of Doctor of Dental Surgery will be awarded upon completion of the prescribed curriculum. Diplomas are issued at the times stated in the Academic Calendar.

► LICENSE TO PRACTICE DENTISTRY IN NEW YORK STATE

Successful performances in Parts I and II of the examinations given by the Council of the National Board of Dental Examiners are preliminary requirements for licensure in most states of the United States including New York.

Those seeking licensure solely in New York State may take the final or clinical examinations offered by the Board of Dental Examiners of the State of New York. Successful completion of these examinations entitles the applicant to licensure, assuming the prerequisites of good moral character, citizenship, or declaration of

intention of becoming a citizen, are fulfilled. For additional information request a copy of *Handbook 10, Professional Education*, from the Division of Professional Licensing Services, New York State Department of Education, Albany, New York 12201.

It is advisable, however, that candidates for licensure take the clinical examinations offered by the North East Regional Board of Dental Examiners, the content and format of which are identical to those of New York State. Successful completion of these examinations, together with fulfillment of such minor prerequisites as may be required by individual states, permits licensure in the states of Connecticut, Maine, Maryland, Massachusetts, New Hampshire, Pennsylvania, Vermont, and West Virginia, and the District of Columbia, as well as New York State.

Additional information, including applications, format of examinations, and examination schedules is available from the North East Regional Board of Dental Examiners, 4645 Deane Avenue, N.E., Washington, D.C. 20019.

Officers of Instruction

ANATOMY

CHAIRMAN: Professor Edward W. Dempsey

Ernest W. April. *Assistant Professor of Anatomy*
B.S., Tufts, 1961; Ph.D., Columbia, 1969

Philip W. Brandt. *Associate Professor of Anatomy*
B.A., Swarthmore, 1952; M.S., Pennsylvania, 1957; Ph.D., Columbia, 1960

Malcolm B. Carpenter. *Professor of Anatomy*
B.A., Columbia, 1943; M.D., Long Island, 1947

George W. Cooper, Jr. *Assistant Professor of Anatomy*
B.A., Brown, 1958; Ph.D., Stanford, 1964

Edward W. Dempsey. *Professor of Anatomy*
B.A., Marietta, 1932; Sc.M., Brown, 1934; Ph.D., 1937; M.A., Harvard, 1946; Sc.D., Marietta, 1954

William G. Dille. *Assistant Professor of Anatomy*
B.A., California (Berkeley), 1965; M.A., 1967; Ph.D., 1970

Charles A. Ely. *Associate Professor of Anatomy*
B.A., Washington and Jefferson, 1936; M.S., Hawaii, 1940; Ph.D., Wisconsin, 1948

Marie D. Felix. *Adjunct Assistant Professor of Anatomy*
B.S., American, 1956; M.S., Cornell, 1961; Ph.D., 1962

Ray C. Henrikson. *Assistant Professor of Anatomy*
B.Sc., Massachusetts, 1959; M.Sc., Brown, 1961; Ph.D., 1965

Mary M. L. Lee. *Assistant Professor of Anatomy*
B.A., Hunter, 1963; M.S., Michigan, 1964; Ph.D., Columbia, 1972

W. Patrick Luckett. *Assistant Professor of Anatomy*
B.A., Missouri, 1961; M.A., 1963; Ph.D., Wisconsin, 1967

Melvin L. Moss. *Professor of Anatomy*
B.A., New York University, 1942; D.D.S., Columbia, 1946; Ph.D., 1954

Letty Moss-Salentijn. *Assistant Professor of Anatomy (assigned to Oral Biology)*
D.D.S., Utrecht, 1967

Charles R. Noback. *Professor of Anatomy*
B.S., Cornell, 1936; M.S., New York University, 1938; Ph.D., Minnesota, 1942

Gerard P. Pereira. *Assistant Professor of Anatomy*
B.S., Columbia, 1961; M.Sc., McGill, 1965; Ph.D., 1968

John J. Rasweiler IV. *Assistant Professor of Anatomy*
B.A., Colgate, 1965; Ph.D., Cornell, 1970

S. C. Shen. *Adjunct Assistant Professor of Anatomy*
B.S., Yenching, 1933; Ph.D., Cambridge, 1939

Alfonso Solimene. *Assistant Professor of Anatomy*
B.A., Brooklyn, 1954; M.A., Columbia, 1959; Ph.D., 1970

ANESTHESIOLOGY

CHAIRMAN: Professor Henrik H. Bendixen

Henrik H. Bendixen. *Professor of Anesthesiology*
M.D., Copenhagen, 1951

Lester C. Mark. *Professor of Anesthesiology*
M.D., Toronto, 1941

S. H. Ngai. *Professor of Anesthesiology*
M.B., National Central (China), 1944

BIOCHEMISTRY

CHAIRMAN: Professor Erwin Chargaff

Reinhold Benesch. *Professor of Biochemistry*
B.Sc., Leeds, 1941; M.Sc., 1945; Ph.D., Northwestern, 1950

Ruth E. Benesch. *Associate Professor of Biochemistry*
B.Sc., London, 1946; Ph.D., Northwestern, 1951

Erwin Chargaff. *Professor of Biochemistry*
Ph.D., Vienna, 1928

Max A. Eisenberg. *Professor of Biochemistry*
B.A., Brooklyn, 1938; M.S., New York University, 1941; Ph.D., Duke, 1950

Philip Feigelson. *Professor of Biochemistry (assigned to Cancer Research)*
B.S., Queens (New York) 1947; Ph.D., Wisconsin, 1951

Allen M. Gold. *Associate Professor of Biochemistry*
B.A., Chicago, 1950; Ph.D., Harvard, 1955

Dezider Grunberger. *Associate Professor of Biochemistry (assigned to Cancer Research)*
M.Sc., Technical University (Prague), 1950; Ph.D., Czechoslovak Academy of Sciences, 1956; Sc.D., 1968

Ronald L. Hanson. *Assistant Professor of Biochemistry*
B.A., Minnesota, 1965; Ph.D., Wisconsin, 1970

John D. Karkas. *Associate Professor of Biochemistry*
B.A., Thessaloniki (Greece), 1952; Ph.D., Columbia, 1962

Alvin I. Krasna. *Professor of Biochemistry*
B.A., Yeshiva, 1950; Ph.D., Columbia, 1955

Seymour Lieberman. *Professor of Biochemistry (assigned to Obstetrics and Gynecology)*
B.S., Brooklyn, 1936; M.S., Illinois, 1937; Ph.D., Stanford, 1941

Barbara W. Low. *Professor of Biochemistry*
B.A., Oxford, 1942; M.A., 1946; D.Phil., 1948

Richard W. Moyer. *Assistant Professor of Biochemistry*
B.S., Pennsylvania State, 1962; Ph.D., California (Los Angeles), 1967

Maurice Rapport. *Professor of Biochemistry (assigned to Psychiatry)*
B.S., College of the City of New York, 1940; Ph.D., California Institute of Technology, 1946

Lawrence E. Skogerson. *Assistant Professor of Biochemistry*
B.A., Grinnell, 1964; Ph.D., Pittsburgh, 1968

David J. Smith. *Associate Professor of Biochemistry and Associate Professor of Dentistry*

D.D.S., Columbia, 1944

David B. Sprinson. *Professor of Biochemistry*

B.S., College of the City of New York, 1931; M.S., New York University, 1936; Ph.D., Columbia, 1946

Parithychery Srinivasan. *Professor of Biochemistry*

B.Sc., Madras, 1946; Ph.D., 1953

DENTAL AND ORAL SURGERY

CHAIRMAN: Professor Melvin L. Moss

COMMUNITY HEALTH

DIRECTOR: Professor Harold L. Applewhite

Harold L. Applewhite. *Associate Professor of Dentistry*

D.D.S., Howard, 1948; M.P.H., Columbia, 1967

Daniel H. Bloom. *Adjunct Assistant Professor of Dentistry*

D.D.S., Pennsylvania, 1946; M.A., Columbia, 1970

Paul J. Dedeaux. *Adjunct Associate Professor of Dentistry*

B.A., Dillard, 1959; D.D.S., Howard, 1963

Neal Alan Demby. *Adjunct Associate Professor of Dentistry*

B.A., Rutgers, 1964; D.M.D., Pennsylvania, 1968

Hilton O. Hosannah. *Adjunct Assistant Professor of Dentistry*

B.S., Howard, 1952; D.D.S., 1958; M.P.H., Columbia, 1970

Yale J. Pava. *Adjunct Assistant Professor of Dentistry*

B.S., College of the City of New York, 1943; D.D.S., New York University, 1946; M.P.H., Columbia, 1970

Houston R. Reagin. *Adjunct Assistant Professor of Dentistry*

B.S., Knoxville, 1962; D.D.S., Howard, 1968

David A. Soricelli. *Adjunct Professor of Dentistry*

D.D.S., Temple, 1955; M.P.H., Harvard, 1958

Carlton A. Sparks. *Adjunct Associate Professor of Dentistry*

B.S., Tennessee State, 1942; D.D.S., Howard, 1949; M.P.H., Columbia, 1969

William Steibel. *Adjunct Assistant Professor of Dentistry*

D.D.S., New York University, 1947

Barry M. Weinberg. *Adjunct Associate Professor of Dentistry*

B.S., College of the City of New York, 1956; D.D.S., New York University, 1960

COURSES FOR DENTAL HYGIENISTS

DIRECTOR: Professor Patricia A. McLean

Marlene Klyvert. *Assistant Professor of Dental Hygiene*

B.S., Columbia, 1971; M.S., 1972

Dora E. McKinney. *Assistant Professor of Dental Hygiene*

B.S., Columbia, 1971; M.S., 1972

Patricia A. McLean. *Associate Professor of Dental Hygiene*

B.S., New York University, 1959; M.A., Columbia, 1961

DENTAL AUXILIARY UTILIZATION

DIRECTOR: Professor David Kaplan

S. Gerald Cardinale. *Adjunct Assistant Professor of Dentistry*
B.S., St. John's (New York), 1955; D.D.S., New York University, 1959

Martin Handlers. *Adjunct Assistant Professor of Dentistry*
D.D.S., New York University, 1945

Robert L. Jacobson. *Adjunct Assistant Professor of Dentistry*
B.S., Bucknell, 1948; D.D.S., New York University, 1953

Joseph E. Kafer. *Assistant Clinical Professor of Dentistry*
B.A., New York University, 1943; D.M.D., Pittsburgh, 1946

David Kaplan. *Associate Professor of Dentistry*
B.S., College of the City of New York, 1958; D.D.S., New York University, 1960

Matthew D. Levin. *Adjunct Professor of Dentistry*
D.D.S., Columbia, 1926

ENDODONTICS

DIRECTOR: Professor Joseph M. Leavitt

Gerald H. Besen. *Adjunct Assistant Professor of Dentistry*
D.D.S., Minnesota, 1947

Howard I. Blum. *Adjunct Assistant Professor of Dentistry*
B.A., Adelphi, 1956; D.D.S., Columbia, 1960

Murray A. Cantor. *Adjunct Assistant Professor of Dentistry*
B.A., Hofstra, 1949; D.D.S., Columbia, 1953

Marvin Firdman. *Adjunct Associate Professor of Dentistry*
B.A., New York University, 1948; D.D.S., Columbia, 1952

Fredric E. Goodman. *Adjunct Assistant Professor of Dentistry*
D.D.S., Temple, 1962

Edward Greenfield. *Adjunct Assistant Professor of Dentistry*
B.S., College of the City of New York, 1953; D.D.S., New York University, 1957

Joseph M. Leavitt. *Clinical Professor of Dentistry*
B.S., Oklahoma, 1936; D.D.S., Columbia, 1940

William Miller. *Adjunct Assistant Professor of Dentistry*
B.S., Columbia, 1929; D.D.S., 1931

S. Abel Moreinis. *Associate Clinical Professor of Dentistry*
D.D.S., Michigan, 1948

Irving J. Naidorf. *Clinical Professor of Dentistry*
B.A., New York University, 1937; D.D.S., Columbia, 1941

Thomas W. Portway. *Adjunct Associate Professor of Dentistry*
B.S., Fordham, 1950; D.D.S., Columbia, 1956

Norbert Ripp. *Adjunct Assistant Professor of Dentistry*
B.A., Brooklyn, 1952; D.D.S., New York University, 1956

Fred Rothenberg. *Adjunct Professor of Dentistry*
D.M.D., Goettingen, 1935; D.D.S., Pennsylvania, 1937

Charles S. Solomon. *Adjunct Assistant Professor of Dentistry*
B.A., Columbia, 1955; D.D.S., 1958

Howard B. Vogel. *Adjunct Assistant Professor of Dentistry*
D.D.S., Columbia, 1950

INTERDISCIPLINARY CORRELATIONS

Hyman D. Koch. *Associate Professor of Dentistry*
B.S., Pittsburgh, 1937; D.D.S., 1937

OPERATIVE DENTISTRY

DIRECTOR: Professor Edward A. Cain, Jr.

Paul R. Bjorklund. *Adjunct Assistant Professor of Dentistry*
B.A., Dartmouth, 1949; D.D.S., Columbia, 1961

Roy Boelstler. *Assistant Clinical Professor of Dentistry*
B.A., Columbia, 1956; D.D.S., 1959

Stanislaw H. Brzustowicz. *Associate Clinical Professor of Dentistry*
B.S., St. John's, 1940; D.D.S., Columbia, 1943

Edward A. Cain, Jr. *Professor of Dentistry*
B.S., Fordham, 1942; D.D.S., Columbia, 1945

Pandelis Camesas. *Adjunct Assistant Professor of Dentistry*
B.S., College of the City of New York, 1949; D.D.S., Columbia, 1953

Kenneth C. Deesen. *Adjunct Associate Professor of Dentistry*
D.D.S., Columbia, 1948

Herbert P. Fritz. *Adjunct Assistant Professor of Dentistry*
B.S., New York University, 1933; D.D.S., Columbia, 1936

Frank L. Mellana. *Adjunct Assistant Professor of Dentistry*
B.S., Fordham, 1956; D.D.S., Columbia, 1962

Frank W. Pandolfo. *Assistant Clinical Professor of Dentistry*
B.S., Queens (New York), 1962; D.D.S., Columbia, 1966

Joseph A. Pianpiano. *Adjunct Assistant Professor of Dentistry*
B.S., Fordham, 1958; D.D.S., Columbia, 1962

George Rudensky. *Adjunct Assistant Professor of Dentistry*
D.D.S., Columbia, 1958

Steven S. Scrivani. *Associate Clinical Professor of Dentistry*
D.D.S., Columbia, 1948

William H. Silverstein. *Adjunct Associate Professor of Dentistry*
D.D.S., Maryland, 1937

ORAL BIOLOGY

ACTING DIRECTOR: Professor David J. Smith

Melvin L. Moss. *Professor of Anatomy*
B.A., New York University, 1942; D.D.S., Columbia, 1946; Ph.D., 1954

Letty Moss-Salientijn. *Assistant Professor of Anatomy (assigned to Oral Biology)*
D.D.S., Utrecht, 1967

David J. Smith. *Associate Professor of Biochemistry and Associate Professor of Dentistry*

D.D.S., Columbia, 1944

Spyros Vratsanos. *Assistant Professor of Microbiology and Assistant Professor of Oral Biology*

B.S., Athens, 1950; M.S., Adelphi, 1956; Ph.D., Fordham, 1961

ORAL SURGERY

DIRECTORS: Professors Louis Mandel and George A. Minervini

Harold D. Baumash. *Adjunct Professor of Dentistry*

D.D.S., Columbia, 1948

Kourken A. Daglian. *Adjunct Associate Professor of Dentistry*

B.S., College of the City of New York, 1941; D.D.S., Columbia, 1943

Anthony L. Di Mango. *Adjunct Assistant Professor of Dentistry*

D.D.S., Georgetown, 1953

John Esposito, Jr. *Adjunct Assistant Professor of Dentistry*

D.D.S., New York University, 1966

Robert L. Haas. *Adjunct Assistant Professor of Dentistry*

D.D.S., Columbia, 1957

Ian Hu. *Adjunct Assistant Professor of Dentistry*

D.D.S., Columbia, 1954

Bertram Klatskin. *Adjunct Associate Professor of Dentistry*

B.A., Cornell, 1937; D.D.S., Columbia, 1941

Louis J. Loscalzo. *Adjunct Professor of Dentistry*

B.A., Fordham, 1942; D.D.S., Temple, 1946

Louis Mandel. *Clinical Professor of Dentistry*

B.A., New York University, 1943; D.D.S., Columbia, 1946

George A. Minervini. *Clinical Professor of Dentistry*

B.A., Columbia, 1942; D.D.S., 1946

Morton Netupsky. *Adjunct Assistant Professor of Dentistry*

B.S., Arizona, 1953; D.M.D., Tufts, 1960

George L. O'Grady. *Adjunct Professor of Dentistry*

B.A., Fordham, 1929; D.D.S., Columbia, 1934

Daniel D. Schube. *Adjunct Assistant Professor of Dentistry*

B.A., Brooklyn, 1945; D.D.S., New York University, 1949

Boaz M. Shattan. *Adjunct Assistant Professor of Dentistry*

B.A., Columbia, 1940; D.D.S., 1943

Morton Jay Stern. *Adjunct Assistant Professor of Dentistry*

B.A., Upsala, 1949; D.D.S., Temple, 1953

At Roosevelt Hospital:

Edward B. Armstrong. *Adjunct Associate Professor of Dentistry*

B.A., Pennsylvania, 1950; D.D.S., New York University, 1954

Gerald E. Lederman. *Adjunct Assistant Professor of Dentistry*

B.S., Columbia, 1960; D.D.S., 1964

Andrew M. Linz. *Professor of Dentistry*

D.D.S., Pennsylvania, 1948; M.Sc. (Dent.), 1953

David Schwartz. *Adjunct Assistant Professor of Dentistry*

B.A., Columbia, 1961; D.D.S., 1965

Peter B. Terenzio. *Adjunct Professor of Dentistry*

L.L.B., Connecticut, 1940; M.H.A., Northwestern, 1950

At St. Luke's Hospital:

E. Joseph Marged. *Adjunct Assistant Professor of Dentistry*

D.D.S., Temple, 1962

Richard H. Sand. *Adjunct Assistant Professor of Dentistry*

B.A., Brooklyn, 1955; D.D.S., New York University, 1959

Abbe J. Selman. *Adjunct Associate Professor of Dentistry*

B.A., New York University, 1940; D.D.S., Maryland, 1944; M.S., 1951

Edward Stroh. *Professor of Dentistry*

D.D.S., Pennsylvania, 1933

OROFACIAL GROWTH AND DEVELOPMENT

DIRECTOR: Professor Sidney L. Horowitz

Alice J. Chabora. *Assistant Clinical Professor of Dentistry*

B.S., Cornell, 1964; M.S., 1965; Ph.D., 1967

Sidney L. Horowitz. *Professor of Dentistry*

B.S., Columbia, 1942; D.D.S., New York University, 1945

Henry R. Junemann. *Associate Clinical Professor of Dentistry*

B.A., Columbia, 1933; D.D.S., 1936

Gary L. Lighter. *Adjunct Assistant Professor of Dentistry*

B.A., State University of New York (Buffalo), 1965; D.M.D., Pennsylvania, 1969

Edward C. McNulty. *Adjunct Assistant Professor of Dentistry*

B.S., Holy Cross, 1957; D.M.D., Harvard, 1962

ORTHODONTICS

DIRECTOR: Professor Nicholas A. Di Salvo

Howard S. Anstendig. *Adjunct Assistant Professor of Dentistry*

B.S., Tufts, 1960; D.M.D., 1964; M.S., 1970

Lawrence W. Bergmann. *Assistant Clinical Professor of Dentistry*

B.A., Colgate, 1951; D.D.S., Georgetown, 1958

Abraham M. Blechman. *Adjunct Assistant Professor of Dentistry*

B.S., New York University, 1945; D.D.S., 1948

Nicholas A. Di Salvo. *Professor of Dentistry*

B.S., College of the City of New York, 1942; D.D.S., Columbia, 1945; Ph.D., 1952

Natale J. Giordano. *Adjunct Assistant Professor of Dentistry*

B.A., Brown, 1963; D.D.S., Columbia, 1967

Monroe M. Gliedman. *Adjunct Associate Professor of Dentistry*

B.S., Massachusetts Institute of Technology, 1946; D.D.S., Columbia, 1952

Richard Gliedman. *Adjunct Associate Professor of Dentistry*

B.S., Massachusetts Institute of Technology, 1946; D.D.S., Columbia, 1952

- James B. Horn. *Assistant Professor of Dentistry*
B.A., Hofstra, 1953; D.D.S., Columbia, 1957
- Robert J. Huettner. *Adjunct Assistant Professor of Dentistry*
B.A., Columbia, 1949; D.D.S., Michigan, 1949; M.S., 1950
- Robert J. Isaacson. *Adjunct Assistant Professor of Dentistry*
B.S., Rutgers, 1953; M.S., 1954; D.D.S., Columbia, 1958
- Jacob I. Kaplan. *Adjunct Associate Professor of Dentistry*
B.A., New York University, 1938; D.D.S., Columbia, 1943
- Gustave Lasoff. *Adjunct Assistant Professor of Dentistry*
B.S., College of the City of New York, 1940; D.D.S., Medical College of Virginia, 1944
- Malcolm E. Meistrell, Jr. *Adjunct Assistant Professor of Dentistry*
B.A., Princeton, 1960; D.D.S., Michigan, 1964
- Eugene F. Murphy. *Adjunct Associate Professor of Dentistry*
B.S., Xavier, 1953; D.D.S., St. Louis, 1957
- Henry I. Nahoum. *Associate Professor of Dentistry*
B.A., Brooklyn, 1940; D.D.S., Columbia, 1943
- Armand M. Oppenheimer. *Adjunct Associate Professor of Dentistry*
B.A., College of the City of New York, 1926; B.S., Columbia, 1927; D.D.S., 1929
- Herbert P. Ostreicher. *Assistant Clinical Professor of Dentistry*
B.A., Columbia, 1943; D.D.S., 1945
- Thomas E. Sheehy. *Adjunct Assistant Professor of Dentistry*
B.S., Fordham, 1959; D.D.S., Pennsylvania, 1963
- Julius Tarshis. *Adjunct Associate Professor of Dentistry*
D.D.S., Pennsylvania, 1949
- Clifford L. Whitman. *Adjunct Professor of Dentistry*
D.D.S., Maryland, 1927

PEDODONTICS

- DIRECTOR: Professor Solomon N. Rosenstein
- Frederick Berlin. *Assistant Clinical Professor of Dentistry*
B.A., Columbia, 1956; D.D.S., 1960
- Albert Green. *Adjunct Assistant Professor of Dentistry*
B.A., Temple, 1950; D.D.S., Pennsylvania, 1954
- Marvin B. King. *Adjunct Assistant Professor of Dentistry*
D.D.S., New York University, 1954
- George C. Kiriakopoulos. *Adjunct Assistant Professor of Dentistry*
B.A., Brooklyn, 1950; D.D.S., Columbia, 1954
- Seymour Koster. *Adjunct Assistant Professor of Dentistry*
B.A., New York University, 1945; D.D.S., 1949
- Philip Kutner. *Adjunct Assistant Professor of Dentistry*
B.S., College of the City of New York, 1944; D.D.S., Columbia, 1951
- Alfred J. Mezza. *Adjunct Assistant Professor of Dentistry*
B.A., New York University, 1959; D.D.S., Fairleigh Dickinson, 1963
- Arnold Rosenberg. *Adjunct Associate Professor of Dentistry*
B.S., New York University, 1943; D.D.S., 1945
- Solomon N. Rosenstein. *Professor of Dentistry*
B.S., College of the City of New York, 1929; D.D.S., Columbia, 1930

- Julian Schroff. *Adjunct Assistant Professor of Dentistry*
B.S., College of the City of New York, 1930; D.D.S., Columbia, 1934
- William A. Verlin. *Adjunct Assistant Professor of Dentistry*
B.A., Columbia, 1929; D.D.S., Columbia, 1931
- David H. Wolmer. *Adjunct Assistant Professor of Dentistry*
B.A., Hunter, 1955; D.D.S., Columbia, 1958

PERIODONTICS

- DIRECTOR: Professor Robert Gottsegen
- Vincent J. Abbatiello. *Adjunct Assistant Professor of Dentistry*
B.A., Cornell, 1966; D.M.D., Harvard, 1970
- Michael Baron. *Adjunct Assistant Professor of Dentistry*
D.D.S., Georgetown, 1968
- Frank E. Beube. *Adjunct Professor of Dentistry*
L.D.S., D.D.S., Toronto, 1930
- Robert L. Blair. *Assistant Clinical Professor of Dentistry*
B.S., Brooklyn, 1965; D.D.S., Temple, 1969
- Robert D. Blank. *Adjunct Assistant Professor of Dentistry*
D.M.D., Pennsylvania, 1965
- Herman Cantor. *Adjunct Assistant Professor of Dentistry*
B.S., New York University, 1934; D.D.S., 1937
- Alvin D. Cederbaum. *Adjunct Assistant Professor of Dentistry*
D.M.D., Tufts, 1939
- Raymond Z. Darakjian. *Assistant Clinical Professor of Dentistry*
D.D.S., Fairleigh Dickinson, 1968
- P. Charles Gabriele. *Adjunct Assistant Professor of Dentistry*
B.A., Brooklyn, 1956; D.D.S., Pennsylvania, 1958
- Arnold M. Geiger. *Adjunct Assistant Professor of Dentistry*
B.A., New York University, 1938; D.D.S., Pennsylvania, 1941
- Jack H. Goetz. *Adjunct Assistant Professor of Dentistry*
D.D.S., Columbia, 1969
- Stephen F. Goodman. *Adjunct Assistant Professor of Dentistry*
D.D.S., Pennsylvania, 1960
- Robert Gottsegen. *Professor of Dentistry*
B.A., Michigan, 1939; D.D.S., Columbia, 1943
- Wesley Halpert. *Associate Clinical Professor of Dentistry*
B.S., College of the City of New York, 1943; D.D.S., Columbia, 1946
- Leonard S. Hirschfeld. *Adjunct Professor of Dentistry*
B.A., Columbia, 1941; D.D.S., 1944
- Raymond F. Johnson. *Adjunct Assistant Professor of Dentistry*
D.D.S., Pennsylvania, 1952
- Irving A. Karel. *Adjunct Assistant Professor of Dentistry*
D.D.S., Temple, 1951
- Milton Klempert. *Adjunct Assistant Professor of Dentistry*
D.D.S., Temple, 1951
- Burton Langer. *Assistant Clinical Professor of Dentistry*
B.S., Tufts, 1960; D.M.D., 1964; M.Sc.D., Boston, 1966

- Walter I. Lipow. *Adjunct Assistant Professor of Dentistry*
D.D.S., Columbia, 1961
- Alan Lubarr. *Adjunct Assistant Professor of Dentistry.*
B.A., Yeshiva, 1964; D.M.D., Pennsylvania, 1968
- David M. Monahan. *Adjunct Assistant Professor of Dentistry*
D.D.S., St. Louis, 1963
- Melvin L. Morris. *Adjunct Professor of Dentistry*
B.S., College of the City of New York, 1934; M.A., Columbia, 1937; D.D.S., 1941
- Morton C. Rennert. *Adjunct Assistant Professor of Dentistry*
B.A., Columbia, 1955; D.D.S., 1958
- Marvin V. Rubin. *Adjunct Assistant Professor of Dentistry*
D.D.S., Pennsylvania, 1945
- Albert Salkind. *Adjunct Assistant Professor of Dentistry*
D.D.S., Marquette, 1943
- Michael B. Savin. *Adjunct Assistant Professor of Dentistry*
B.A., Rochester, 1961; D.M.D., Pennsylvania, 1965
- Murray Schwartz. *Associate Clinical Professor of Dentistry*
B.A., New York University, 1950; D.D.S., Columbia, 1953
- Marvin Solomon. *Adjunct Assistant Professor of Dentistry*
B. Chem. Eng., College of the City of New York, 1960; D.D.S., Fairleigh Dickinson, 1965
- Marvin Spodek. *Adjunct Assistant Professor of Dentistry*
B.S., Brooklyn, 1952; D.D.S., Columbia, 1956
- Stephen D. Stein. *Adjunct Assistant Professor of Dentistry*
B.A., New York University, 1962; D.D.S., 1966
- Bernard H. Wasserman. *Adjunct Associate Professor of Dentistry*
B.A., Brooklyn, 1941; D.D.S., Columbia, 1944

PREVENTIVE DENTISTRY

DIRECTOR: Professor Irwin D. Mandel

- Lillian H. Bachman. *Adjunct Assistant Professor of Dentistry*
B.S., Queens (New York), 1959; D.D.S., Columbia, 1963; M.A., 1967
- Allan N. Blitz. *Assistant Professor of Dentistry*
B.A., City College, 1963; M.A., 1967; Ed.D., Kentucky, 1972
- Harold P. Cobin. *Adjunct Assistant Professor of Dentistry*
B.S., St. John's (New York), 1927; D.D.S., Columbia, 1931
- Samuel F. Dworkin. *Associate Professor of Dentistry*
B.S., College of the City of New York, 1954; D.D.S., New York University, 1958; Ph.D., 1969
- Daniel H. Fine. *Assistant Professor of Dentistry*
B.S., Queens (New York), 1961; D.M.D., Pennsylvania, 1965
- Robert S. Goldman. *Assistant Clinical Professor of Dentistry*
B.A., Temple, 1963; D.M.D., Pittsburgh, 1968
- Irwin D. Mandel. *Professor of Dentistry*
B.S., College of the City of New York, 1942; D.D.S., Columbia, 1945
- Herbert I. Oshrain. *Adjunct Associate Professor of Dentistry*
B.S., College of the City of New York, 1938; D.D.S., New York University, 1942
- Kenneth L. Siegel. *Adjunct Assistant Professor of Dentistry*
B.A., Dartmouth, 1960; D.D.S., Columbia, 1964

Stephen Wotman. *Associate Professor of Dentistry*

D.D.S., Pennsylvania, 1956

Albert Zengo. *Assistant Professor of Dentistry*

B.S., Tufts, 1959; D.D.S., Columbia, 1964

PROSTHODONTICS

DIRECTOR: Professor John J. Lucca

Jacob Abelson. *Assistant Clinical Professor of Dentistry*

B.S., College of the City of New York, 1941; D.D.S., Columbia, 1945

Herbert D. Ayers. *Associate Professor of Dentistry*

B.A., Columbia, 1929; D.D.S., 1931

Harold H. Blank. *Adjunct Assistant Professor of Dentistry*

B.A., New York University, 1939; D.D.S., Columbia, 1942

Victor S. Caronia. *Adjunct Professor of Dentistry*

D.D.S., Columbia, 1957

Joseph A. De Julia. *Adjunct Associate Professor of Dentistry*

B.S., Pittsburgh, 1951; D.D.S., Columbia, 1962

Gustav T. Durrer. *Adjunct Assistant Professor of Dentistry*

Dr. Med. Dent., Berne, 1937; D.D.S., Pennsylvania, 1940

Joel Friedman. *Adjunct Associate Professor of Dentistry*

B.A., New York University, 1936; D.D.S., Columbia, 1939

Gerald M. Galvin. *Adjunct Assistant Professor of Dentistry*

B.S., St. John's (Brooklyn), 1952; D.D.S., Columbia, 1956

Joel Goldin. *Adjunct Assistant Professor of Dentistry*

B.A., Amherst, 1959; D.M.D., Harvard, 1963

Alvin J. Grayson. *Associate Clinical Professor of Dentistry*

D.D.S., Indiana, 1952

George W. Hindels. *Adjunct Associate Professor of Dentistry*

M.D., Vienna, 1938; D.D.S., Columbia, 1943

Alfred Holzman. *Assistant Clinical Professor of Dentistry*

D.D.S., Michigan, 1927

Arnold S. Jutkowitz. *Adjunct Assistant Professor of Dentistry*

D.M.D., Pennsylvania, 1966

John J. Lucca. *Professor of Dentistry*

B.A., New York University, 1941; D.D.S., Columbia, 1947

William J. Miller. *Adjunct Associate Professor of Dentistry*

B.A., New York University, 1940; D.D.S., Columbia, 1943

Robert D. Miner. *Adjunct Assistant Professor of Dentistry*

B.S., Denison, 1962; D.D.S., Columbia, 1967

Ralph K. Neuhaus. *Adjunct Assistant Professor of Dentistry*

B.S., Moravian, 1961; D.D.S., Columbia, 1965

William Raebeck, Jr. *Adjunct Assistant Professor of Dentistry*

B.S., Colgate, 1948; D.D.S., Columbia, 1947

Robert Renner. *Adjunct Assistant Professor of Dentistry*

B.A., New York University, 1964; D.D.S., Columbia, 1968

Louis I. Rubins. *Adjunct Assistant Professor of Dentistry*

B.S., Queens (New York), 1956; D.D.S., Columbia, 1960

John M. Scarola. *Adjunct Associate Professor of Dentistry*

B.S., Fordham, 1956; D.D.S., Columbia, 1960

Peter H. Strife II. *Adjunct Assistant Professor of Dentistry*

B.A., Middlebury, 1959; D.D.S., Pennsylvania, 1959

Ennio L. Uccellani. *Associate Professor of Dentistry*

B.S., College of the City of New York, 1946; D.D.S., Columbia, 1948

Maxwell Widrow. *Associate Clinical Professor of Dentistry*

D.D.S., Temple, 1940

At Grasslands Hospital:

Max P. Fishberg. *Adjunct Associate Professor of Dentistry*

B.S., College of the City of New York, 1941; D.D.S., New York University, 1944

Robert E. Herlands. *Adjunct Professor of Dentistry*

B.A., Columbia, 1941; D.D.S., 1944

PSYCHIATRIC DENTAL SERVICE

DIRECTOR: Professor Austin H. Kutscher

William C. Baral. *Adjunct Assistant Professor of Dentistry*

B.S., Columbia, 1950; D.D.S., 1953

Martin Bassiur. *Adjunct Assistant Professor of Dentistry*

B.A., New York University, 1964; D.D.S., 1968

Joseph C. De Lisi. *Adjunct Associate Professor of Dentistry*

D.D.S., Columbia, 1952

Gary D. Gross. *Adjunct Assistant Professor of Dentistry*

B.A., Cornell, 1962; D.D.S., New York University, 1966

Bernard Gurian. *Adjunct Assistant Professor of Dentistry*

B.S., Illinois, 1937; D.D.S., 1939

Herman S. Harris. *Adjunct Assistant Professor of Dentistry*

D.D.S., New York University, 1929

Ellen N. Hosiosky. *Adjunct Associate Professor of Dentistry*

D.M.D., Basle, 1935; D.H., Guggenheim Dental Clinic, 1939; D.D.S., Columbia, 1947

Austin H. Kutscher. *Associate Professor of Dentistry*

B.S., New York University, 1945; D.D.S., Columbia, 1946

Harold P. Rose. *Adjunct Assistant Professor of Dentistry*

D.M.D., Tufts, 1937

Arthur Shain. *Associate Clinical Professor of Dentistry*

B.S., New York University, 1935; D.D.S., Dalhousie, 1939

Ann R. Turkel. *Adjunct Assistant Professor of Dentistry*

B.A., Barnard, 1947; M.D., Albany Medical College, 1952

Jay Weiss. *Adjunct Assistant Professor of Dentistry*

B.A., Harvard, 1948; D.M.D., Tufts, 1952

STOMATOLOGY

DIRECTOR: Professor Edward V. Zegarelli

Martin I. Ames. *Adjunct Assistant Professor of Dentistry*

B.A., New York University, 1945; D.D.S., 1949

- Jack Budowsky. *Adjunct Professor of Dentistry*
D.D.S., Columbia, 1943
- Robert E. Crowley. *Adjunct Associate Professor of Dentistry*
B.A., New York University, 1936; D.D.S., 1939
- Joseph A. Cuttita. *Professor of Dentistry*
B.A., Fordham, 1932; M.S., 1935; D.D.S., Columbia, 1939
- John V. Donovan. *Assistant Clinical Professor of Dentistry*
B.S., Wagner, 1963; D.D.S., Columbia, 1967
- Frances R. Karlan. *Adjunct Assistant Professor of Dentistry*
B.S., Massachusetts Institute of Technology, 1942; D.D.S., Columbia, 1949
- Mortimer Karmioli. *Adjunct Associate Professor of Dentistry*
B.S., College of the City of New York, 1939; D.D.S., Columbia, 1943
- Laurence J. Levine. *Assistant Clinical Professor of Dentistry*
D.D.S., Columbia, 1968
- John K. Lind. *Adjunct Associate Professor of Dentistry*
B.S., St. John's, 1951; D.D.S., Columbia, 1957
- Michael Z. Marder. *Associate Clinical Professor of Dentistry*
D.D.S., Columbia, 1963
- Robert N. Schiff. *Adjunct Assistant Professor of Dentistry*
B.A., Columbia, 1955; D.D.S., 1958
- Diane Stern. *Adjunct Assistant Professor of Dentistry*
B.A., Hunter, 1958; D.D.S., Columbia, 1961
- Robert Umans. *Adjunct Associate Professor of Dentistry*
D.D.S., New York University, 1939
- Robert F. Walsh. *Adjunct Associate Professor of Dentistry*
D.D.S., Columbia, 1947
- David J. Zegarelli. *Assistant Professor of Dentistry and Assistant Professor of Pathology*
B.A., Columbia, 1965; D.D.S., 1969
- Edward V. Zegarelli. *Edwin S. Robinson Professor of Dentistry*
B.A., Columbia, 1934; D.D.S., 1937; M.S., Chicago, 1943
- Edward Zerden. *Adjunct Assistant Professor of Dentistry*
B.A., Michigan, 1941; D.D.S., New York University, 1945

Section of Special Dental Services

- Jerome Bartwink. *Adjunct Assistant Professor of Dentistry*
D.M.D., Tufts, 1948
- Morton S. Brod. *Adjunct Associate Professor of Dentistry*
B.A., Adelphi, 1951; D.D.S., Columbia, 1955
- Sebastian A. Bruno. *Adjunct Professor of Dentistry*
D.M.D., Tufts, 1948
- Martin J. Fields. *Adjunct Assistant Professor of Dentistry*
D.M.D., Tufts, 1948
- Eugene P. LaSota. *Adjunct Associate Professor of Dentistry*
B.A., Hofstra, 1957; D.D.S., Columbia, 1961
- Joseph Luban. *Adjunct Assistant Professor of Dentistry*
B.S., College of the City of New York, 1938; D.D.S., Columbia, 1942

Joseph J. Marbach. *Adjunct Professor of Dentistry*

B.A., Drew, 1956; D.D.S., Pennsylvania, 1960

David Zeisler. *Adjunct Associate Professor of Dentistry*

B.S., College of the City of New York, 1930; D.D.S., Columbia, 1934

DERMATOLOGY

CHAIRMAN: Professor Leonard C. Harber

Leonard C. Harber. *Professor of Dermatology*

B.A., Johns Hopkins, 1949; M.D., New York University, 1953

Saul L. Sanders. *Clinical Professor of Dermatology*

B.A., Kenyon, 1950; M.D., Cornell, 1954

Richard A. Walzer. *Associate Clinical Professor of Dermatology*

B.A., Harvard, 1952; M.D., Columbia, 1956

MEDICINE

CHAIRMAN: Professor Charles A. Ragan

Henry Aranow, Jr. *Professor of Clinical Medicine*

B.A., Harvard, 1935; M.D., Columbia, 1938

Leslie Baer. *Assistant Professor of Medicine*

B.A., Wisconsin, 1959; M.D., Columbia, 1963

Stuart W. Cosgriff. *Clinical Professor of Medicine*

B.A., Holy Cross, 1938; M.D., Columbia, 1942

Wendell B. Hatfield. *Assistant Professor of Clinical Medicine*

B.A., Columbia, 1953; M.D., 1956

Donald A. Holub. *Associate Professor of Clinical Medicine*

B.A., Columbia, 1949; M.D., 1952

George A. Hyman. *Associate Clinical Professor of Medicine*

B.A., Columbia, 1942; M.D., 1945

Edgar Leifer. *Professor of Clinical Medicine*

B.S., College of the City of New York, 1937; M.A., Columbia, 1939; Ph.D., 1941; M.D., 1946

Jane H. Morse. *Assistant Professor of Medicine*

B.A., Smith, 1951; M.D., Columbia, 1955

Hans W. Neuberg. *Assistant Professor of Clinical Medicine*

B.A., Wagner, 1941; M.D., Columbia, 1950

Hymie L. Nossel. *Professor of Medicine*

M.B., Ch.B., Cape Town, 1953; Ph.D., Oxon, 1962

Kermit L. Pines. *Clinical Professor of Medicine*

B.A., Columbia, 1937; M.D., 1942

MICROBIOLOGY

CHAIRMAN: Professor Harry M. Rose

Joe E. Coward. *Assistant Professor of Microbiology*

B.S.E., State College of Arkansas, 1959; M.S., Arkansas, 1962; Ph.D., Mississippi School of Medicine, 1968

Paul D. Ellner. *Professor of Microbiology*

B.S., Long Island, 1949; M.S., Southern California, 1952; Ph.D., Maryland, 1956

Bernard F. Erlanger. *Professor of Microbiology*

B.S., College of the City of New York, 1943; M.A., New York University, 1949; Ph.D., Columbia, 1951

Harold S. Ginsberg. *Professor of Microbiology*

B.A., Duke, 1937; M.D., Tulane, 1941

Donald H. Harter. *Professor of Neurology (assigned to Microbiology)*

B.A., Pennsylvania, 1953; M.D., Columbia, 1957

Elvin A. Kabat. *Professor of Microbiology and Human Genetics and Development*

B.S., College of the City of New York, 1932; M.A., Columbia, 1934; Ph.D., 1937

Wladislaw Manski. *Associate Professor of Microbiology*

M.Phil., Warsaw, 1939; D.Sc., Wroclaw, 1951

Harry M. Rose. *John E. Borne Professor of Medical and Surgical Research*

B.A., Yale, 1928; M.D., Cornell, 1932

Herbert S. Rosenkranz. *Professor of Microbiology*

B.S., College of the City of New York, 1954; Ph.D., Cornell, 1959

Spyros M. Vratsanos. *Assistant Professor of Microbiology and Assistant Professor of Oral Biology*

B.S., Athens, 1950; M.S., Adelphi, 1956; Ph.D., Fordham, 1961

OTOLARYNGOLOGY

CHAIRMAN: Professor Daniel C. Baker, Jr.

Daniel C. Baker, Jr. *Professor of Otolaryngology*

B.A., Pennsylvania, 1929; M.D., Jefferson, 1933; Med.Sc.D., 1939

Robert M. Hui. *Professor of Clinical Otolaryngology*

B.A., Southern California, 1943; M.D., 1946

John D. Piro. *Assistant Clinical Professor of Otolaryngology*

B.A., Fordham, 1943; D.D.S., Columbia, 1946

PATHOLOGY

CHAIRMAN: Professor Donald West King

Giles G. Allard. *Assistant Clinical Professor of Pathology*

M.D., Laval (Canada), 1950

Lucretia Allen. *Assistant Clinical Professor of Pathology*

B.A., New York University, 1948; M.D., State University of New York, 1952

Irwin Almenoff. *Associate Clinical Professor of Pathology*

B.S., College of the City of New York, 1948; M.D., Cornell, 1952

Ernest Baden. *Adjunct Associate Professor of Pathology*

M.A., Sorbonne, 1946; D.D.S., New York University, 1950; M.D., Geneva, 1963

Daniel Benninghoff. *Associate Clinical Professor of Pathology*

B.A., Yale, 1949; M.D., Columbia, 1953

William Bernhard. *Assistant Clinical Professor of Pathology*

B.S., Wisconsin, 1927; M.D., Pennsylvania, 1931

Melvin N. Blake. *Associate Clinical Professor of Oral Pathology*

D.D.S., New York University, 1955

- William A. Blanc. *Professor of Pathology*
B.A., Geneva, 1940; M.D., 1947; Ph.D., 1952
- A. Whitley Branwood. *Professor of Pathology*
M.B., Ch.B., Edinburgh, 1942; M.D., 1948
- Donald E. Brown. *Associate Clinical Professor of Pathology*
M.D., Harvard, 1943
- John M. Budinger. *Associate Clinical Professor of Pathology*
B.S., Northwestern, 1950; M.D., 1954
- David Cowen. *Professor of Neuropathology*
B.A., Columbia, 1928; M.D., 1936
- Ada B. DeChablon. *Assistant Clinical Professor of Pathology*
B.S., Liceo Senioritas, 1949; M.D., Buenos Aires, 1957
- Richard Defendini. *Assistant Professor of Neuropathology*
B.A., Michigan, 1948; M.A., 1951; M.D., Rochester, 1961
- Arline D. Deitch. *Assistant Professor of Pathology*
B.A., Brooklyn, 1944; M.A., Columbia, 1946; Ph.D., 1954
- Phillip Duffy. *Professor of Neuropathology*
B.A., Columbia, 1943; M.D., 1947
- Stefan E. Epstein. *Assistant Clinical Professor of Pathology*
B.A., Columbia, 1956; M.D., State University of New York, 1960
- Joshua A. Fierer. *Assistant Professor of Pathology*
B.A., Alfred, 1959; M.D., State University of New York, 1963
- S. Raymond Gambino. *Professor of Pathology*
B.S., Antioch, 1948; M.D., Rochester, 1952
- Lester M. Geller. *Associate Professor of Neuropathology*
B.A., Cornell, 1947; M.A., Michigan State, 1948; Ph.D., New York University, 1953
- Gabriel Godman. *Professor of Pathology*
B.A., New York University, 1941; M.D., 1944
- Reba M. Goodman. *Assistant Professor of Pathology*
B.A., Indiana, 1949; Ph.D., Columbia, 1955
- John G. Gorman. *Clinical Professor of Pathology*
M.B., B.S., Melbourne, 1953
- Liselotte Graf. *Assistant Professor of Pathology*
M.D., Vienna, 1937
- Ross M. Grey. *Associate Professor of Pathology*
D.V.M., Alabama Polytechnical Institute, 1945
- Elliott M. Gross. *Assistant Clinical Professor of Pathology*
B.A., Columbia, 1955; M.D., New York University, 1959
- Don V. Hellerman. *Assistant Clinical Professor of Pathology*
B.S., Springfield College, 1957; M.D., New York Medical College, 1961
- Victor D. Herbert. *Clinical Professor of Pathology*
B.S., Columbia, 1948; M.D., 1952
- Robert L. Hirsch. *Associate Clinical Professor of Pathology*
B.A., Cornell, 1947; M.D., 1951
- Harry L. Ioachim. *Adjunct Professor of Pathology*
M.D., Bucharest, 1949

- Austin D. Johnston. *Associate Professor of Pathology (assigned to Orthopedic Surgery)*
B.A., Columbia, 1945; M.D., 1947
- Lewis A. Johnson. *Assistant Professor of Pathology*
B.A., Minnesota, 1951; M.D., 1955
- Mavis Kaufman. *Associate Professor of Neuropathology (assigned to Psychiatry)*
M.D., New York Medical College, 1944
- Hans Kaunitz. *Clinical Professor of Pathology*
M.D., Vienna, 1930
- Gordon I. Kaye. *Associate Professor of Surgical Pathology*
B.A., Columbia, 1955; M.A., 1957; Ph.D., 1961
- Donald West King. *Francis Delafield Professor of Pathology*
M.D., Syracuse, 1949
- Mary Elizabeth King. *Assistant Professor of Pathology*
B.A., Smith, 1947; M.D., Columbia, 1951
- Nathan Lane. *Professor of Surgical Pathology*
B.A., Columbia, 1943; M.D., 1945
- Raffaele Lattes. *Professor of Surgical Pathology*
M.D., Turin, 1933; Med.Sc.D., Columbia, 1946
- William L. McLellan. *Assistant Professor of Pathology*
B.A., Boston, 1951; M.A., 1954; Ph.D., 1957
- Hiroshi Nakazawa. *Assistant Clinical Professor of Pathology*
M.D., Keio (Japan), 1958
- M. Richard Pachter. *Assistant Clinical Professor of Pathology*
M.D., Zurich, 1956
- Robert Pascal. *Associate Professor of Surgical Pathology*
B.A., Columbia, 1958; M.D., 1962
- Karl H. Perzin. *Associate Professor of Surgical Pathology*
B.A., Columbia, 1954; M.D., 1958
- Sidney Pestka. *Adjunct Professor of Pathology*
B.A., Princeton, 1957; M.D., Pennsylvania, 1961
- William Pollack. *Assistant Professor of Pathology*
B.Sc., London, 1948; M.Sc., 1950; Ph.D., Rutgers, 1964
- Ralph M. Richart. *Professor of Pathology (assigned to Obstetrics & Gynecology)*
B.A., Johns Hopkins, 1954; M.D., Rochester, 1958
- Leon Roizin. *Professor of Neuropathology (assigned to Psychiatry)*
B.A., State Lyceum (Bessarabia), 1930; M.D., Royal University (Milan), 1936
- Sarkis S. Sarkisian. *Assistant Clinical Professor of Pathology*
M.D., Illinois, 1942
- Henry G. Schriever. *Assistant Clinical Professor of Pathology*
B.A., Vermont, 1956; M.D., New York Medical College, 1960
- Stanley S. Simbonis. *Associate Clinical Professor of Pathology*
B.S., Yale, 1953; M.D., 1957
- Ralph Wood Snyder. *Assistant Clinical Professor of Pathology*
B.S., McGill, 1951; M.D.C.M., 1953
- Harold J. Sobel. *Associate Clinical Professor of Pathology*
B.A., Brooklyn, 1950; M.D., Chicago Medical School, 1954

- Sheldon C. Sommers. *Clinical Professor of Pathology*
M.D., Harvard, 1941
- Harry H. Stumpf. *Adjunct Associate Professor of Pathology*
B.A., New York University, 1947; M.D., State University of New York, 1951
- Richard L. Swarm. *Associate Clinical Professor of Pathology*
B.A., Washington (St. Louis), 1949; M.D., 1950
- Myron Tannenbaum. *Associate Professor of Pathology (assigned to Urology)*
B.S., New York University, 1952; M.S., 1955; Ph.D., 1957; M.D., Chicago, 1961
- Virginia Tennyson. *Associate Professor of Neuropathology*
B.S., Pennsylvania State, 1946; M.S., Baylor, 1956; Ph.D., Columbia, 1960
- John A. Terzakis. *Assistant Clinical Professor of Pathology*
M.D., New York University, 1961
- Philip Tomashefsky. *Assistant Professor of Pathology*
B.S., College of the City of New York, 1946; M.S., 1951; Ph.D., New York University, 1969
- Myron E. Tracht. *Associate Clinical Professor of Pathology*
B.A., Princeton, 1948; M.S., Chicago, 1954; M.D., 1955
- Henry J. Vogel. *Professor of Microbiology*
B.S., London, 1939; M.S., New York University, 1941; Ph.D., 1949
- Ruth H. Vogel. *Assistant Professor of Pathology*
Ph.D., New York University, 1948
- Bernard M. Wagner. *Clinical Professor of Pathology*
M.D., Hahnemann, 1949
- H. Joachim Wigger. *Associate Professor of Pathology*
M.D., Hamburg, 1954
- Sigmund Wilens. *Professor of Pathology*
Ph.D., Yale, 1926; M.D., 1929
- Marianne Wolff. *Associate Professor of Surgical Pathology*
B.A., Hunter, 1948; M.D., Columbia, 1952
- Kaity Yannopoulos. *Assistant Clinical Professor of Pathology*
M.D., Thessaloniki (Greece), 1954
- Frederick T. Zugibe. *Adjunct Associate Professor of Pathology*
B.S., St. Francis (New York), 1951; M.S., Chicago, 1959; Ph.D., 1960; M.D., West Virginia, 1968

PHARMACOLOGY

- CHAIRMAN: Professor Brian F. Hoffman
- J. Thomas Bigger, Jr. *Associate Professor of Pharmacology and Associate Professor of Medicine*
B.A., Emory, 1955; M.D., Georgia, 1960
- Marvin R. Blumenthal. *Adjunct Assistant Professor of Pharmacology*
B.S., Michigan, 1946; M.D., Columbia, 1949
- Paul F. Craneheld. *Adjunct Associate Professor of Pharmacology*
Ph.B., Wisconsin, 1946; Ph.D., 1951; M.D., Yeshiva, 1964
- Lowell M. Greenbaum. *Professor of Pharmacology*
B.S., College of the City of New York, 1949; Ph.D., Tufts, 1953
- Brian F. Hoffman. *David Hosack Professor of Pharmacology*
B.A., Princeton, 1943; M.D., Long Island, 1947

Frederick G. Hofmann. *Professor of Pharmacology*

B.A., Michigan, 1943; Ph.D., Harvard, 1952

Norman Kahn. *Associate Professor of Pharmacology*

B.A., Columbia, 1954; D.D.S., 1958; Ph.D., 1964

William G. Kelly. *Assistant Professor of Pharmacology (in Obstetrics and Gynecology)*

B.S., Fordham, 1952; M.S., 1954; Ph.D., Purdue, 1959

Edward B. Kirsten. *Assistant Professor of Pharmacology*

B.S., Fairleigh Dickinson, 1962; M.S., New York University, 1966; M.A., Hunter, 1969; Ph.D., City University of New York, 1969

Elizabeth E. LeBourhis. *Adjunct Assistant Professor of Pharmacology*

B.A., Barnard, 1958; Ph.D., Columbia, 1966

Michael R. Rosen. *Assistant Professor of Pharmacology*

B.A., Wesleyan, 1960; M.D., State University of New York, Downstate Medical Center, 1964

Howard Sachs. *Adjunct Professor of Pharmacology*

B.S., Brooklyn, 1949; M.A., Columbia, 1950; Ph.D., 1953

Wilbur H. Sawyer. *Professor of Pharmacology*

B.A., Harvard, 1942; M.D., 1945; Ph.D., 1950

Jurg A. Schneider. *Adjunct Associate Professor of Pharmacology*

M.D., Berne, 1945

Lance L. Simpson. *Assistant Professor of Pharmacology and Psychiatry*

B.A., Vanderbilt, 1966; Ph.D., California (Berkeley), 1969

Sidney Spector. *Adjunct Professor of Anesthesiology and Adjunct Professor of Pharmacology*

B.S., Denver, 1948; M.S., 1950; Ph.D., Jefferson, 1956

Hsueh-Hwa Wang. *Associate Professor of Pharmacology*

M.D., National Central University Medical School (China), 1946

Shih-Chun Wang. *Professor of Pharmacology*

B.S., Yenching, 1931; M.D., Peiping Union Medical College (China), 1935; Ph.D., Northwestern 1940

Martin M. Winbury. *Assistant Professor of Pharmacology*

B.S., Long Island, 1940; M.S., Maryland, 1942; Ph.D., New York University, 1951

Andrew L. Wit. *Assistant Professor of Pharmacology*

B.S., Bates, 1963; Ph.D., Columbia, 1968

PHYSIOLOGY

CHAIRMAN: Professor John V. Taggart

Martin Blank. *Associate Professor of Physiology*

B.S., College of the City of New York, 1954; Ph.D., Columbia, 1957; Ph.D., Cambridge, 1959

John Britten. *Assistant Professor of Physiology*

B.S., Yale, 1954; M.D., Columbia, 1958

Shu Chien. *Professor of Physiology*

M.B., National Taiwan, 1954; Ph.D., Columbia, 1957

Louis J. Cizek. *Associate Professor of Physiology*

B.S., Fordham, 1937; M.D., Columbia, 1941

Raimond Emmers. *Associate Professor of Physiology*

B.A., East Texas Baptist, 1953; M.A., North Carolina, 1955; Ph.D., Syracuse, 1958

Arthur Karlin. *Associate Professor of Physiology (assigned to Neurology)*

B.A., Swarthmore, 1957; Ph.D., Rockefeller Institute, 1962

William L. Nastuk. *Professor of Physiology*

B.S., Rutgers, 1939; Ph.D., 1945

Mero R. Nocenti. *Associate Professor of Physiology*

B.A., West Virginia, 1951; M.S., 1952; Ph.D., Rutgers, 1955

John P. Reuben. *Associate Professor of Physiology (assigned to Neurology)*

B.A., Grinnell, 1954; M.S., Rochester, 1956; Ph.D., Florida, 1959

David Schachter. *Professor of Physiology*

B.S., New York University, 1946; M.D., 1949

John V. Taggart. *John C. Dalton Professor of Physiology*

M.D., Southern California, 1940

Paul Witkovsky. *Associate Professor of Physiology (assigned to Ophthalmology)*

B.A., California (Los Angeles), 1958; M.A., 1960; Ph.D., 1962

PSYCHIATRY

CHAIRMAN: Professor Lawrence C. Kolb

Lawrence C. Kolb. *Professor of Psychiatry*

M.D., Johns Hopkins, 1934

Bernard Schoenberg. *Associate Professor of Clinical Psychiatry*

M.D., Columbia, 1954

PUBLIC HEALTH

CHAIRMAN: Professor John H. Bryant

Lowell E. Bellin. *Professor of Public Health (Health Administration)*

B.S., Yale, 1948; M.D., State University of New York (Downstate), 1951; M.P.H., Harvard, 1964

John H. Bryant. *DeLamar Professor of Public Health*

B.S., Arizona, 1949; M.D., Columbia, 1953

John L. Colombotos. *Associate Professor of Sociomedical Sciences*

B.A., Columbia, 1949; M.A., 1952; Ph.D., Michigan, 1961

Morton A. Fisher. *Adjunct Associate Professor of Health Administration*

B.S., Western Reserve, 1942; D.D.S., 1944; B.A., Brooklyn, 1958; M.P.H., Columbia, 1957

Nora Piore. *Adjunct Professor of Health Economics*

B.A., Wisconsin, 1933; M.A., 1934

SURGERY

CHAIRMAN: Professor Keith Reemtsma

George F. Crikelair. *Professor of Clinical Surgery*

B.A., Wisconsin, 1941; M.D., 1944

Frederic P. Herter. *Professor of Surgery*

B.A., Harvard, 1941; M.D., 1944

Keith Reemtsma. *Professor of Surgery*

B.S., Idaho State, 1945; M.D., Pennsylvania, 1949

ASSOCIATES

Paul Bachner (*Pathology*)
 Herbert Barden (*Pathology*)
 Glenna J. Corley (*Pathology*)
 Stephen Firestein (*Psychiatry*)
 Louise A. Goode (*Microbiology*)
 Robert H. Heissenbuttel (*Medicine*)
 Paul K. Johnson (*Medicine*)
 Daniel Justman (*Psychiatry*)
 Leon Lefer (*Psychiatry*)
 Henry P. Levy
 Alvin J. Marx (*Pathology*)
 Doris J. Mitchell (*Pathology*)
 Peter K. Pang (*Pharmacology*)
 Philip Person
 Samuel M. Ross (*Pharmacology*)
 Richard F. Sabbia (*Pathology*)
 Robert Silbert (*Psychiatry*)
 Robert E. Wenk (*Pathology*)

SENIOR RESEARCH ASSOCIATE

Neal W. Chilton

RESEARCH ASSOCIATES

Solomon L. Katz
 Margaret Long (*Pathology*)
 Herbert F. Silvers
 Robert Stebbins (*Pathology*)
 Irwin Steuer
 Glenn Tisman (*Pathology*)
 Heli Vinnka
 Ephraim Weinstein

INSTRUCTORS

David C. Abelson
 Solange AbuNassar (*Pathology*)
 Robert L. Ambinder
 Philip J. Bauer
 Erlinda A. Benedicto
 Stuart A. Berman
 Ralph S. Blume (*Medicine*)
 Alvin T. Boyd

INSTRUCTORS (*continued*)

Robert S. Breakstone
 James J. Cancro
 John F. Capriccio
 S. Gerald Cardinale
 Michele M. Darby
 Harold Darwin
 Arnold I. Fink
 Edgar Gattegno
 Steven I. Gold
 Jay P. Goldsmith
 Richard A. Greenberg
 Walter A. Gutstein
 Charlotte Hangorsky
 Robert M. Hunt, Jr. (*Anatomy*)
 James J. Johnson
 Joseph E. Kafer
 Harmon R. Katz
 Steven R. Katz
 John F. Kosinski
 Eugene M. Levine
 Kenneth R. Levy
 Arnold L. Lisio (*Medicine*)
 James F. McCosker
 Daniel L. Macken (*Medicine*)
 Richard M. Mankoff (*Pathology*)
 Stephen Mender
 Irwin Mindell
 Dennis N. Morea
 Thomas F. Morgenstern
 Robert D. Newman (*Pathology*)
 Joseph E. O'Brien (*Pathology*)
 Herbert Rabinowitz
 Charles A. Rogers
 Moshe Rosen (*Pathology*)
 Nicholas A. Vero
 Lewis Zagon

ASSISTANTS

Richard F. Ceen
 Howard Gordon
 Quentin M. Murphy

LECTURERS

Jerry L. Adelson
James W. Benfield
Robert M. Cole
Hyman Donnenfeld (*Pathology*)
Morris Eckhaus
Robert L. Fisher
Harry A. Galton
Stanley L. Gibbs
Frank R. Hopf
George F. Lindig

LECTURERS (*continued*)

George V. Lyons
Marvin Mansky
Howard J. Ruderman
Arthur B. Weiss
Herbert Williams
Alan Wishner

SPECIAL LECTURERS

Edmund Applebaum
Sydney C. Rappaport

► PRESBYTERIAN HOSPITAL DENTAL SERVICE

DIRECTOR: Melvin L. Moss

CONSULTANTS: Carl R. Oman, Albin R. Seidel, and Gilbert P. Smith

ATTENDING DENTAL SURGEONS: Edward A. Cain, Jr., Nicholas A. Di Salvo, Robert Gottsegen, John J. Lucca, and Edward V. Zegarelli

ASSOCIATE ATTENDING DENTAL SURGEONS: Victor S. Caronia, Joseph A. Cuttita, Louis J. Loscalzo, Irwin D. Mandel, Louis Mandel, Joseph J. Marbach, George A. Minervini, and Ennio L. Uccellani

ASSISTANT ATTENDING DENTAL SURGEONS: Jerome Bartwink, Harold D. Baurmash, Sebastian A. Bruno, Stanislaw H. Brzustowicz, Jack Budowsky, Kourken A. Daglian, Anthony L. DiMango, Martin J. Fields, Sidney L. Horowitz, Bert Klatskin, Austin H. Kutscher, Eugene P. LaSota, Laurence J. Levine, John K. Lind, Joseph Luban, Michael Z. Marder, Henry I. Nahoum, Irving J. Naidorf, Arnold Rosenberg, Fred Rothenberg, Daniel D. Schube, Murray Schwartz, Steven S. Scrivani, Boaz M. Shattan, Morton J. Stern, and Stephen Wotman

Academic Calendar, 1973-1974

MAJOR RELIGIOUS HOLIDAYS

See "Attendance and Length of Residence" on page 24 of this bulletin for a statement of University policy on absence for the observance of religious holidays.

- Sept 4-5** Tuesday-Wednesday. Registration, including payment of fees.
- 10** Monday. Classes begin.
- Nov 6** Tuesday. Election Day. Holiday.
- 21** Wednesday. First trimester ends for third- and fourth-year classes.
- 22-24** Thursday-Saturday. Thanksgiving holidays.
- 26** Monday. Second trimester begins for third- and fourth-year classes.
- Dec 22** Saturday, through January 6, 1974, Sunday. Christmas holidays.
- Jan 18** Friday. First semester ends for second-year class.
- 21** Monday. Second semester begins for second-year class.
- Feb 15** Friday. First semester ends for first-year class.
- 16-24** Saturday-Sunday. Intersession. No classes for first-year class.
- 18** Monday. Washington's Birthday. Holiday.
- 22** Friday. Second trimester ends for third- and fourth-year classes.
- 25** Monday. Third trimester begins for third- and fourth-year classes. Second semester begins for first-year class.
- 28** Thursday. Last day to apply or reapply for all degrees and certificates to be awarded in May. Later filing of applications requires payment of a late fee.
- Apr 6-14** Saturday-Sunday. Spring holidays.
- May 10** Friday. Third trimester ends for fourth-year class.
- 15** Wednesday. Conferring of degrees and certificates.
- 20-24** Monday-Friday. Examinations for second- and third-year classes.
- 27** Monday. Memorial Day. Holiday.

- June 7** Friday. Second semester ends for first-year class.
- 10–14** Monday–Friday. Final examinations for first-year class.
- 28** Friday. Third trimester ends for third-year class. Second semester ends for second-year class.
- July 4** **Thursday. Independence Day. Holiday.**



This map illustrates the University Heights neighborhood, showing a grid of streets and the locations of various educational and cultural institutions. The streets shown include West 112th Street, West 113th Street, West 114th Street, West 115th Street, West 116th Street, West 117th Street, West 118th Street, West 119th Street, West 120th Street, West 121st Street, West 122nd Street, and West 123rd Street. The map also shows Riverside Drive, Claremont Avenue, Broadway, and Morningside Drive. Key institutions labeled include the University of Cincinnati, Xavier University, and various churches and seminaries. A compass rose is located in the top right corner.

Riverside Drive

Morningside Drive

West 116th Street

Subway

620 616 Casa Hispanica

Woodbridge 635 617 Parking Lot Haskell

West 115th Street

St. Hilida's and St. Hugh's School 612 Watson Parking Lot Broadway Presbyterian

Hudson 604-618

McVickar

West 123rd Street

Jewish Theological Seminary

West 122nd Street

Grant Sarasota

Corpus Christi Church

Bancroft The Fairholm

West 121st Street

Horace Mann

Thorndike

Macy

Grace Dodge

Teachers College

Thompson

Main

Russell

Whittier

West 120th Street

The diagram illustrates the campus layout of the University of Illinois at Chicago. Buildings are represented by white shapes, and paths are shown as black lines. Key buildings and areas include:

- Pupin** and **Seeley W Mudd** at the top.
- Engineering Terrace** to the right of Seeley W Mudd.
- Gymnasium (under construction)** below Pupin.
- Chandler** and **Havemeyer** on the left side.
- Mathematics** and **Earl** below Chandler.
- Lewisohn** and **Dodge** at the bottom left.
- Uris** in the center, with a dashed line connecting it to Chandler and a solid line connecting it to Schermerhorn.
- lower level: University Hall & Gymnasium** above Uris.
- Schermerhorn Ext** and **Schermerhorn** to the right of Uris.
- Avery** and **Fayerweather** below Schermerhorn.
- Philosophy** at the bottom right.
- St Paul's Chapel** and **Foreign Student Center** above Philosophy.
- Kent** at the bottom right.
- Alma Mater** below Uris.

Additional features include a **Computer Center** near Chandler, a **Service Building** near Schermerhorn, and a **Person** icon near Chandler.

A map of the College Walk area. The map shows several buildings and landmarks. At the top, a grey horizontal bar is labeled "College Walk". Below this, the map is divided into several sections. On the left, there is a section labeled "Journalism" and "Furnald". Below "Furnald" is "Wellman Auditorium". At the bottom left is "Ferris Booth" and "Carman". In the center is "Butler Library". To the right of "Butler Library" is "Hartley" and "Livingston". At the bottom right is "John Jay". Above "Hartley" is "Hamilton" and "Annex". At the very bottom is "Harkness Theatre".

West 114th Street

540 520 Ruggles

523

Experimental College

West 113th Street

McBain	560 Maison Française	548	546 Slavic Languages Deutsches Haus
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Armstrong

Plimpton (Barnard)	Seth Low
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A map of the West 118th Street area in Amsterdam. The map shows a grid of streets. West 118th Street runs horizontally across the top. A vertical street runs down the right side. The intersection of West 118th Street and the vertical street is marked with a large '400'. Below this intersection, the vertical street is labeled '70 Morningside Drive'. To the left of the vertical street, the area is labeled 'International Affairs'. Further left, the area is labeled 'Casa Italiana'. The map is titled 'West 118th Street' at the top. The word 'Amsterdam' is written vertically on the left side. The word 'Morning' is written vertically on the right side.

401 West 117th Street

Law Johnson Faculty House President's House

West 116th Street


King's Crown Hotel

1127
Amsterdam
Avenue

1125
West 115th Street
Woman's Hospital
Notre Dame Church
Eli White

St Luke's Hospital

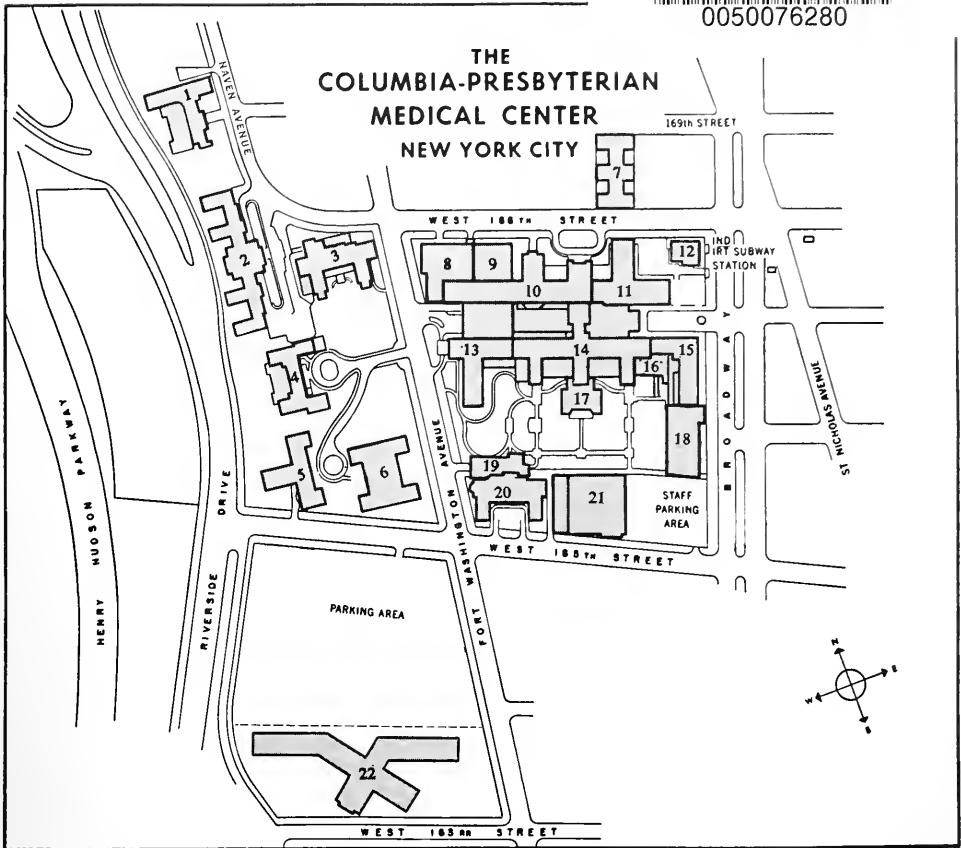
Health Service





0050076280

THE
COLUMBIA-PRESBYTERIAN
MEDICAL CENTER
NEW YORK CITY



- | | |
|--|--|
| 1. BARD HALL | 13. HARKNESS PAVILION |
| 2. N.Y. STATE PSYCHIATRIC INSTITUTE
PSYCHOANALYTIC CLINIC | 14. PRESBYTERIAN HOSPITAL
N.Y. ORTHOPEDIC HOSPITAL
SLOANE HOSPITAL
SQUIER UROLOGICAL CLINIC |
| 3. NEUROLOGICAL INSTITUTE OF NEW YORK | 15. BABIES HOSPITAL |
| 4. MAXWELL HALL | 16. RADIOTHERAPY CENTER |
| 5. HARKNESS MEMORIAL HALL | 17. PAULINE A. HARTFORD MEMORIAL
CHAPEL |
| 6. DANA W. ATCHLEY PAVILION | 18. BABIES HOSPITAL RESEARCH,
TEACHING, AND OFFICE
ADDITION |
| 7. GEORGIAN NURSES RESIDENCE | 19/20. EDWARD S. HARKNESS
EYE INSTITUTE |
| 8. WILLIAM BLACK MEDICAL
RESEARCH BUILDING | 21. CENTRAL SERVICE BUILDING |
| 9. ALUMNI AUDITORIUM | 22. FRANCIS DELAFIELD HOSPITAL,
N.Y.C. |
| 10. COLLEGE OF PHYSICIANS & SURGEONS | |
| 11. VANDERBILT CLINIC
SCHOOL OF DENTAL AND ORAL SURGERY | |
| 12. DEPARTMENT OF HEALTH
SCHOOL OF PUBLIC HEALTH
WASHINGTON HEIGHTS HEALTH
CENTER, N.Y.C. | |

To Reach the Medical Center: By subway, the Washington Heights Express of the IND Eighth Avenue or the Van Cortland Park train of the IRT Seventh Avenue. By bus, Fifth Avenue Bus #4 or #5. By car, the Westside Highway exit at the George Washington Bridge. Parking facilities are available at West 164th Street and Fort Washington Avenue.

To Columbia Students

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